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JUDGE for Yourself

Exhibit A—Reducing Gas/Oil Ratios

Report of Baker Cement Retainer—Model "K"

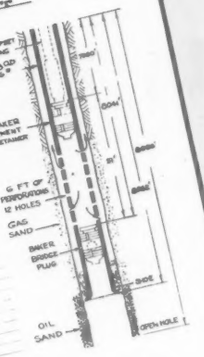


Exhibit B—Sure and Easy Recementing

Report of Baker Cement Retainer—Model "K"

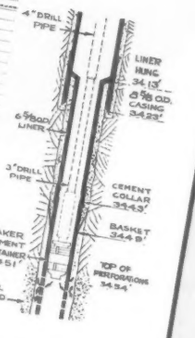
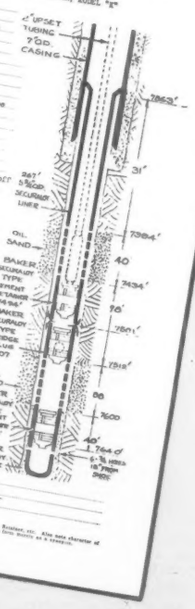


Exhibit C—Cementing Blank Pipe

BAKER SECURALOY ALUMINUM ALLOY CEMENT RETAINER, MODEL "K"



This INDISPUTABLE EVIDENCE IN THE CASE OF THE BAKER CEMENT RETAINER versus OIL WELL PROBLEMS

THE VERDICT IS UNANIMOUS...

... among modern operators in favor of the Baker Cement Retainer as the tool to solve many present-day oil well completion and repair problems. This verdict is based on the remarkable results being accomplished by this tool even under extremely adverse field and operating conditions. The evidence submitted above represents actual field reports taken from the hundreds we have on file proving conclusively the successful results being accomplished with the Baker Cement Retainer in a wide range of important applications.

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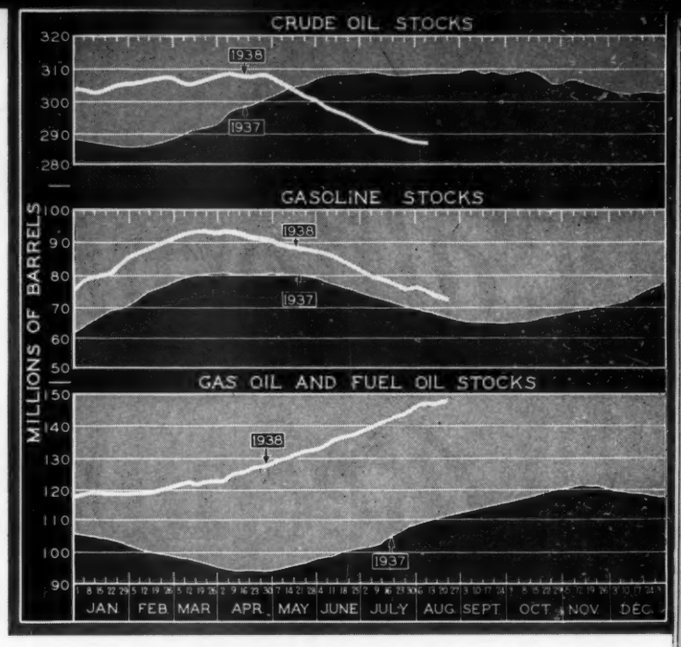
BAKER CEMENT RETAINER

Trends

Lower Allowables Are Expected to Relieve East Texas Situation



THE 15-cent reduction in the price they pay for East Texas crude made by three independent refiners on Saturday and Tuesday, bringing the price to $1.20 per barrel affects only about 3.2 per cent of the current crude production of that field up to the writing of this review. This and a further increase of 46,086 barrels per day in the production of crude oil in the United States were the unfavorable features of the week.

CRUDE PRODUCTION *3,397,056 barrels daily average—up 46,086. One year ago 3,726,262 barrels.*

CRUDE STOCKS *287,406,000 barrels as of August 6—down 1,108,000. One year ago—307,922,000 barrels.*

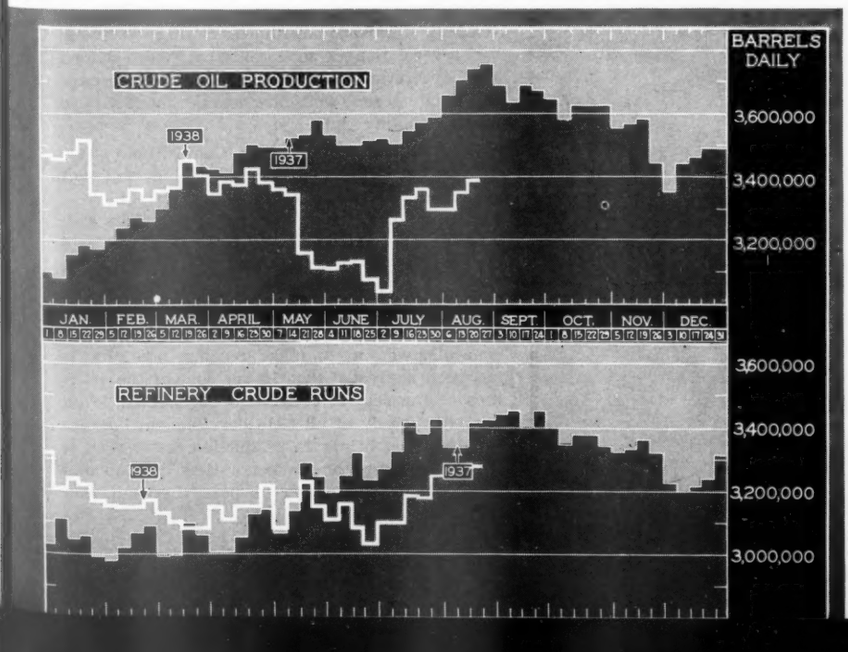
GASOLINE STOCKS *72,709,000 barrels as of August 20—down 1,678,000. One year ago—67,260,000 barrels.*

GAS AND FUEL OIL STOCKS *147,180,000 barrels as of August 20—up 919,000. One year ago—110,493,000 barrels.*

REFINERY RUNS *3,265,000 barrels daily week ending August 20—down 30,000. One year ago—3,415,000 barrels.*

It is the consensus that if the September allowables in the various states where proration is effective are reduced in conformity with the expected reduction in gasoline consumption, the East Texas situation will right itself. The Texas Railroad Commission will act on September allowables after the state primary elections Saturday, August 27, and there is a strong feeling in Texas in favor of a resumption of Saturday shutdowns in addition to the shutdown on Sundays. The new price for East Texas crude fixed by three minor companies is the same as the top price for 40-gravity oil and 4 cents higher than for 38-gravity crude in North and Central Texas. East Texas crude ranges from 38 degrees upward. It is 2 cents below the top price paid for North Louisiana crude.

The steady increase in the production of crude in Illinois is bringing the state's output up to a point where it threatens to equal if not exceed the peak in 1910. Last week's production was the highest in 25 years and while it was about 40,000 bbls. below the 1910 peak it was not representative of the state's potential, as production was held down to some extent by lack of pipe line facilities. Drilling in Illinois increases with the passing of the weeks, and new counties are being added to the list of those being explored. Southwestern Michigan attracted added attention in the past week with discoveries in Allegan and Van Buren counties. The Overisel pool in Allegan County, opened in July, has already a dozen producing wells and 13 more drilling. The latest well in the pool is producing 600 bbls. per day pinched in. A quick settling of the flush production is expected in this new field.



DAILY AVERAGE PRODUCTION FOR WEEK

	Aug.20, 1938	Bur. Mines Aug. est.	Aug. state allowable	Aug. 13, 1938
Oklahoma City	123,250	.....	.....	116,475
Fitts	39,250	.....	.....	42,275
Remainder of State	280,900	.....	.....	280,825
Total Oklahoma	443,400	529,700	428,000	439,575
East Texas	440,798	.....	.....	440,000
West Texas	220,050	.....	.....	218,950
North Central Texas	104,650	.....	.....	104,697
Texas Panhandle	75,402	.....	.....	71,849
East Central Texas	97,697	.....	.....	97,550
Gulf Coast Texas	348,200	.....	.....	347,350
Southwest Texas	106,750	.....	.....	107,648
Total Texas	1,393,547	1,377,800	1,614,805	1,388,044
North Louisiana	78,775	.....	.....	82,225
Gulf Coast Louisiana	182,300	.....	.....	173,800
Total Louisiana	261,075	256,100	256,712	256,025
California	683,250	649,300	610,000	672,500
Kansas	168,075	169,300	165,500	165,200
Arkansas	55,770	53,900	.....	55,775
Illinois	61,705	45,800	.....	55,323
Michigan	49,154	60,000	.....	48,928
Eastern Fields	97,100	102,300	.....	95,280
New Mexico	106,930	112,300	107,000	107,050
Rocky Mountain area	77,050	81,600	.....	67,270
Total United States	3,397,056	3,438,100	.....	3,350,970

Weakness developing in gasoline at the peak of the heavy consuming season with its unfavorable influence on other products, has deepened the discouraging aspect of the refinery market. A clouded crude situation adds to the refiner's uneasiness, and the prospect of bringing gasoline stocks to an economic level by October is not reassuring. Need of sharp cuts in plant operations is clear.

In showing trends in gasoline stocks, gas oil and fuel oil stocks, and refinery runs erroneous figures were published in last week's issue as a result of comparisons being made for a two-week period instead of one week. The total figures given were correct.

California Oil Situation C

Because of Uncertain

By L. P. STOCKMAN

LOS ANGELES, Calif., Aug. 22.—With the fourth quarter of 1938 only a little over a month away, California producers, marketers and refiners have started to visualize, as far as possible, the probable expectation for the last three months of the year and the first three months of 1939. It is practically impossible to prognosticate, with any degree of certainty, the trend of events for more than three months ahead under existing conditions but the outlook appears so unfavorable a long range diagnosis is necessary.

A number of important factors that should exert a pronounced effect on the California oil industry and might even precipitate a serious crisis later this year are developing or in the formative stage. These factors include (1) a production of crude oil far in excess of the amount required to permit a substantial reduction of crude and refined oil stocks during the period of peak demand, (2) a consistent decline in offshore shipments to Japan and the Orient, (3) partial displacement of California petroleum by Mexican oil, (4) a potential production far in excess of normal requirements for several years to come, (5) a very sick fuel oil market with additional accumulations of stocks expected to continue for the next several months, (6) far too much drilling and (7) the outstanding progress made in deep drilling and the substantial reduction effected in drilling time from spud to completion.

Drilling operations and crude oil production are susceptible of regulation by California operators but the other factors are outside the normal sphere of operations. Stringent curtailment of production will be obligatory after the current peak demand has been passed and curtailment or regulation of production will be necessary for several years to maintain a reasonable semblance of order.

California operators, faced with the necessity of effecting greater curtailment later this year when the demand for crude and refined oil declines with the seasonal change, have started to reduce drilling in proved fields but still are prospecting aggressively for new fields to maintain existing reserves. This paradoxical situation reflects a general realization that, while it is imperative to increase or at least maintain future reserves of crude, considerable unnecessary drilling is being done by all major companies and a number of large independent producers. A considerable part of this superfluous drilling can be attributed to lease requirements which, in some instances, stipulate that at least two strings of tools must be kept in operation at all times until maximum drilling requirements have been fulfilled, or provide that all drilling must be done within a stipulated time. In addition to continuous development, most leases provide that operators must produce line wells in order to prevent drainage and thus curtailment is rendered difficult. Drilling operations during the past few years have consistently increased the potential production of the state with the result that curtailment has become increasingly difficult or practically impossible.

Improved Methods

Drilling operations are exerting a pronounced effect on production and curtailment and this will become more evident within another year due to improved methods of drilling which have resulted in a substantial reduction in the time required to drill a well. The rapidity with which wells are being completed is seriously impairing curtailment.

When Santa Fe Springs, Long Beach, Huntington Beach and other Los Angeles Basin fields were in the ascendancy it took operators three or four months to drill 5,000 feet of hole whereas today operators are drilling from 8,000 to 11,000 feet of hole in four or five weeks. Ten years ago it was customary to expect peak production in a normal field in from ten months to a year but today peak production in the same field would be reached in about six months due to faster drilling.

Rapid Drilling

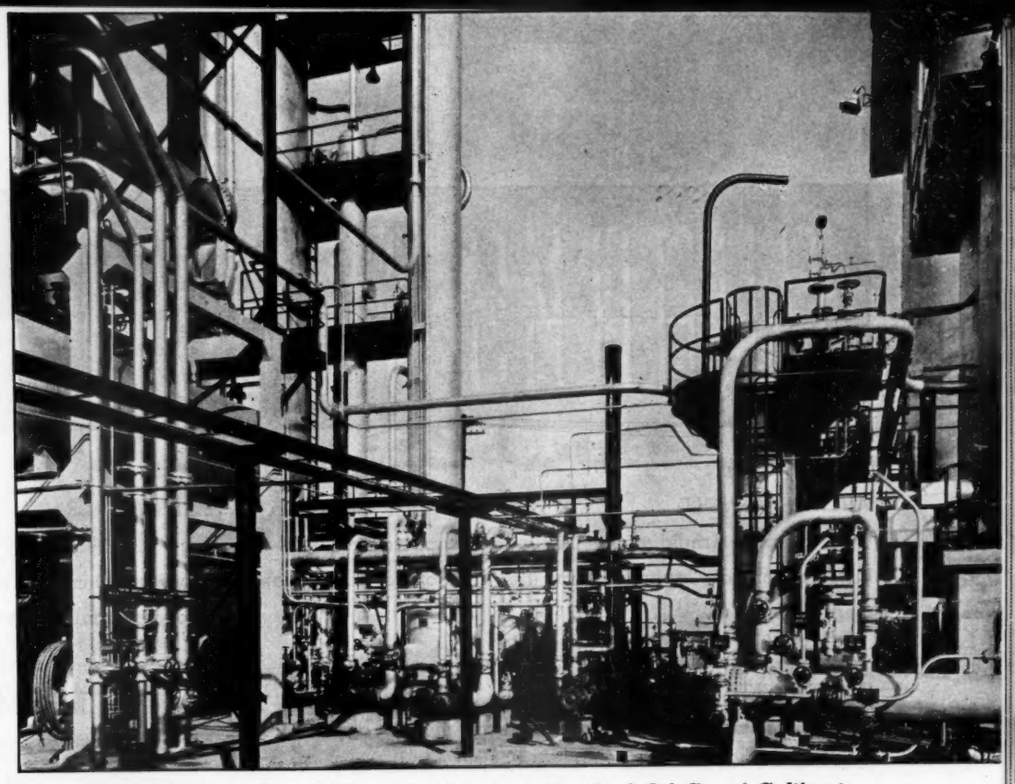
Superior Oil Co. has been a pioneer in fast drilling by adopting the latest improved methods, not the least of which has been the use of over-size derricks and heavy surface equipment. Elimination of unpremeditated crooked hole drilling, wire line coring and stringent control of drilling fluid are other important factors contributing to rapid drilling. In the Rosecrans field, Superior Oil Co. has just drilled 7,658 feet of hole in 23 days and had the well tanking oil 26 days after it was spudded in. This includes the landing of 988 feet of 13⅜-inch surface casing, a 7-inch water string at 7,553 feet and 123 feet of 6⅝-inch liner in addition to a string of 2½-inch tubing.

The new speed records in California drilling are not limited to any particular area, field or depth as the same speed that has characterized drilling operations in the Ten Section and Rio Bravo fields in the San Joaquin Valley is being recorded in the Wilmington field of Los Angeles Basin.In Wilmington, several Ranger zone wells have been drilled to a depth around 2,900 feet in less than ten days and Terminal zone wells now average about 15 days elapsed drilling time.

At a recent meeting of the Central Committee of California Oil Producers, official curtailment group, A. C. Rubel, director of production of Union Oil Co., called attention to this state of affairs and, a committee of three was appointed to investigate the proposal of curtailing drilling or working out some mutually advantageous program with lessors. The umpire was instructed by the central committee to work out details of drilling especially where concentrated and to make recommendations. It has been suggested that 10 per cent of the activities of the central committee be devoted to an analytical study of oil field development because rapid drilling brings in production faster than it can be absorbed or market outlets develop and thus defeats the primary purpose of curtailment.

Deck of modern tanker

n Ominous n Factors



Polymerization plant, Richmond refinery of Standard Oil Co. of California

Under existing conditions, operators have very little leeway in adopting the most advantageous system of well-spacing as most standard leases stipulate a minimum number of wells must be drilled on each lease. Theoretically this protects the lessor against unscrupulous operators but it also penalizes the legitimate operator by making it obligatory to invest capital for drilling operations that are not necessary. This is especially true at present where in some fields one well could produce the entire allotment of a lease containing numerous other wells that had to be drilled because of lease requirements and then shut in upon completion.

In some areas, especially in the San Joaquin basin, lessors permit operators to work out a uniform system of spacing to mutual benefit. This has certain advantages especially where leases are held in large blocks as it permits operators, by limiting drilling to one well to each 40 acres, to cover more ground in less time and thus define the limits of the field quickly as well as alleviating offset requirements. Intermediate locations are subsequently drilled on the basis of one well to each 20 acres provided the productive zone is capable of such development. Rio Bravo and some other fields in San Joaquin basin are being developed on the basis of staggered locations with one well to each 40 acres. Certain lease requirements are causing some concern because they stipulate the acreage must be developed on the basis of one well to each 20 acres.

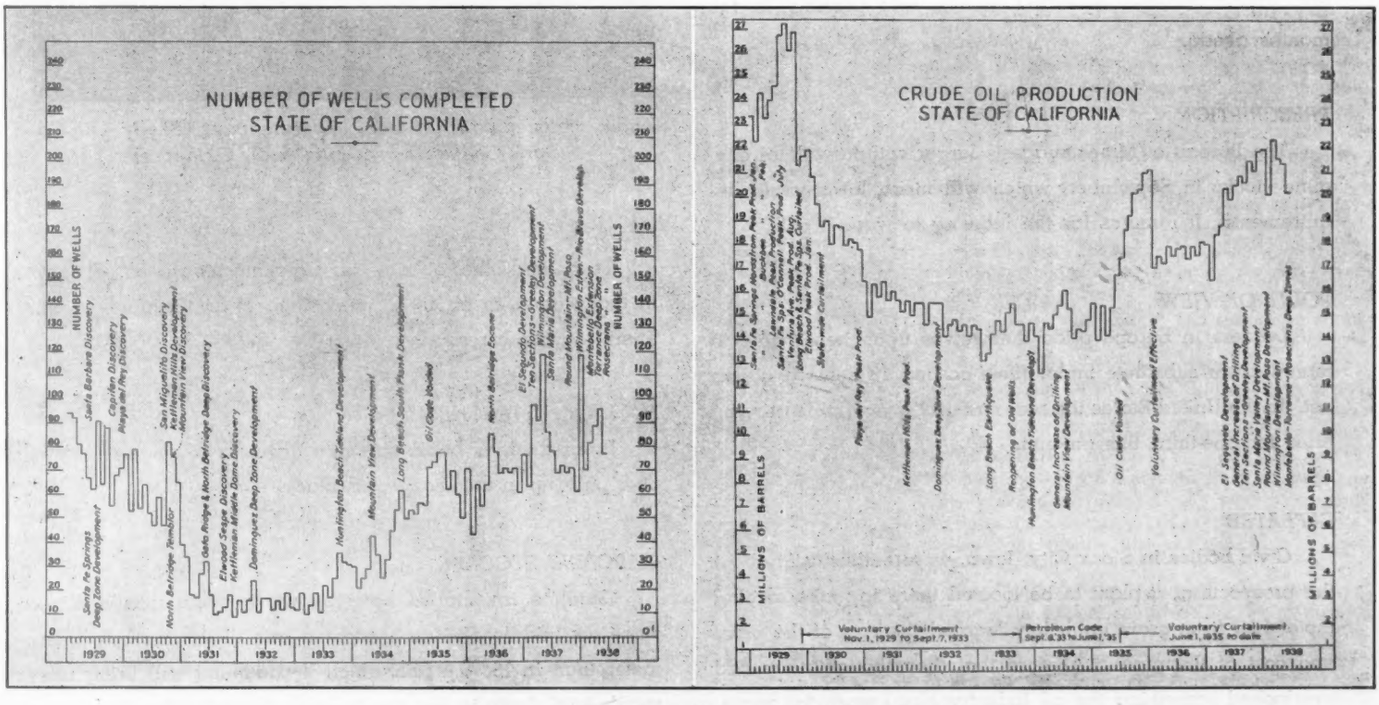
Changes Needed

Rapidly changing times and progressively deeper drilling demand that drastic changes be made in lease forms to correct a situation that is becoming a serious problem from a production and curtailment standpoint. It is clear an operator should not be forced to drill the same number of wells on a lease in one field where the completion depth is around 10,000 feet that would be required on a lease in another field where the completion depth averages around 5,000 feet with due regard being taken of zone thickness and other factors that influence production.

The situation in the Santa Maria Valley field is an outstanding example, as leases provide that a minimum of drilling must be undertaken even though most of the field has been shut down due to inability to find a satisfactory market. Here is a case where operators must keep on drilling even though they cannot market production. Production was suspended around July 1 and partially resumed on August 14 to conform with contracts which provide operators must protect their respective leases from drainage.

Tanker shipments of crude and refined oil to foreign and domestic ports have been an important factor in preventing a general collapse of the California oil industry resulting from a sustained production of crude far in excess of normal requirements. Substantial offshore shipments must continue if we are to weather the impending storm. Japan and the Orient are normal markets for California marketers and the ability of Japan to absorb abnormally large quantities of petroleum during the past year has greatly alleviated conditions on the Pacific Coast.

(Continued on Page 42)



Data from American Petroleum Institute

SPARKS FROM THE NEWS

AUTHOR ARNOLD

Thurman Arnold should write a companion volume to his "Folklore of Capitalism" on the "Folklore of the Department of Justice.

ILLINOIS FIGURES

Illinois last week produced more oil than in any similar period since 1913, when it averaged 65,463 bbls. a day. In the seven most productive years in Illinois, 1907 to 1912, inclusive, the state produced 181,930,000 barrels which sold at an average price of 67.4 cents per barrel. The lowest yearly average price was in 1910, 59 cents per barrel.

FIXIT JOB

The law of supply and demand seems to be in need of repairs. When consumption of gasoline is at its height, and stocks are declining a million or so barrels weekly, prices break.

CALIFORNIA'S PLIGHT

The entire industry has something at stake in the California situation, which is none too good, due to overproduction and export changes in recent months and possibly in the months ahead.

PRESCRIPTION

The Bureau of Mines suggests larger withdrawals of gasoline stocks in September, which will mean lower crude requirements. It remains for the industry to work it out.

POINT OF VIEW

Leaders in Europe pride themselves upon being able to manufacture substitute motor fuels costing 18 cents a gallon net. In the United States the real material is available at refineries for one-third this amount.

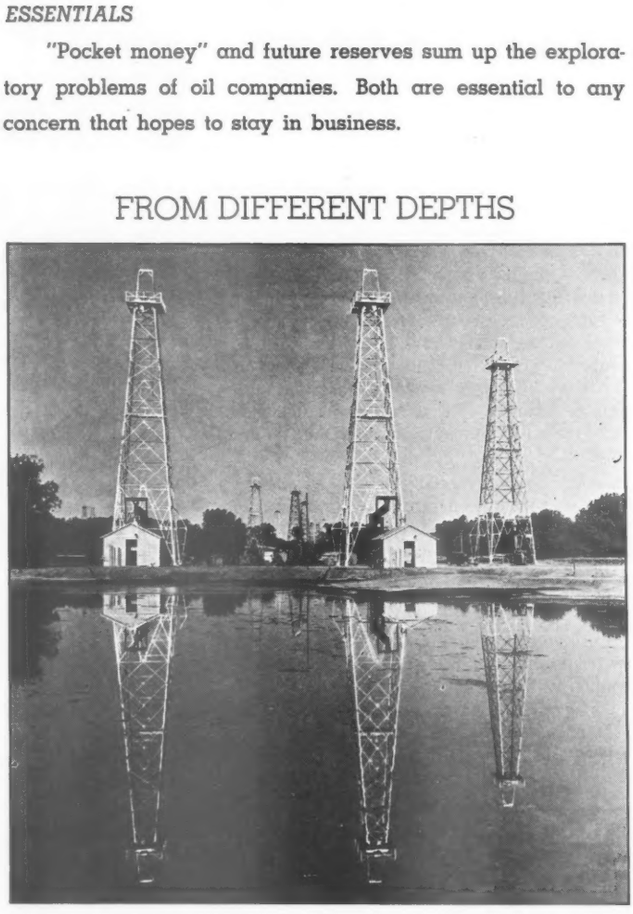
DEFLATED

Civic bodies in Sioux City, Iowa, were enthusiastic about the prospects of a plant to be located there to make alcohol motor fuel from grain until they learned the cost of the plant and cost of the product. Before that they thought they had overlooked something the oil industry has known for years.

ESSENTIALS

"Pocket money" and future reserves sum up the exploratory problems of oil companies. Both are essential to any concern that hopes to stay in business.

FROM DIFFERENT DEPTHS



Three wells, producing from separate pays, Skelly Oil Co. Park College lease, Fitts pool, Oklahoma

BIFOCAL

Texas and other oil men are watching the run-off primary in that state with about as much interest as the price of oil. There may be a reason.

MICHIGAN MARCHES ON

Just as things begin to settle down in Michigan a new pool pops up in an unexpected place.

GASOLINE STOCKS

Gasoline inventories have shown a continuous decline since the middle of March and the rate of decline has been faster than in 1937, a fact which if continued will bring this year's total down to last year's level about October 1.

Britton Discovery Enlivens Capital

By DAL DALRYMPLE

THE DISCOVERY of oil in a wildcat well south of Britton and almost within the proverbial stone's throw of producers in the State Capitol district has centered attention anew on the Oklahoma City field and strengthened belief of oil men that many producing areas are yet to be uncovered along the Nemaha buried mountain range in Oklahoma.

The new pool opener is Olson Oil Co. and associates No. 1 Vanek, SE SW NE Section 4-12-3w, south of Britton townsite, between the Oklahoma City and Britton pools in Oklahoma County, and along the Nemaha trend.

The Vanek first attracted general attention some weeks ago when it found saturation in second Wilcox sand topped at 6,721 feet and was drilled to 6,751 feet. It failed to make a producer there and the crew was ordered to deepen. The hole was deepened under pressure to 6,766 feet, with casing cemented at 6,717 feet. Tubing was run and operators prepared for a test. On the night of August 16 it was swabbed into production, flowed about 60 bbls. of oil an hour at the start and then settled down to about 9 or 10 bbls. an hour, continuing at that rate until it was shut in to build up pressure. Flow was through open tubing. The crude tested 36 gravity at natural temperature of 65 degrees, with no water showing. Gas gauged around 2,100,000 feet daily.

The operators elected to deepen. At 6,770 feet the well was averaging 10½ bbls. of oil an hour and at 6,772 feet it made 15 bbls. hourly. On Monday of this week it had reached total depth of 6,776 feet, where drilling stopped when water appeared with the oil. It then was averaging 12 bbls. of oil an hour, intrusion of water lowering the oil flow. Gas gauged 3,600,000 feet daily. Operators were expected to plug back a few feet to avoid water intrusion, clean out and complete.

Trading Is Reported

It is thought to be on a small structure, covering some 1,500 or 1,600 acres. Most of the acreage around the pool opener has been leased for some time, but buying was reported to the west of the well where there was some unleased land. Some royalty trading was reported.

Another Oklahoma County wildcat that has vied with the Olson discovery for attention of Oklahoma operators in recent weeks, the Fain Drilling Co. and others No. 1 Little, SW SW NE Section 28-11-3w, cored from 7,000 to 7,006 feet, recovered 6 inches of core with a stain and odor of oil, and was bailing below 6,000 feet. At 6,988 feet in Wilcox sand a drill-stem test showed 25 joints of salt water, with only a scum of oil. However, a core at 6,955-88 feet had shown oil saturation, with pipe set at 6,956 feet. If efforts to find production in the lower sands fail, operators may plug back, perforate casing and test the lower Simpson zone. The wildcat is considerably lower structurally than wells to the east and north in the Oklahoma City field, but compares favorably with the Moore pool to the south in Cleveland County. Some observers are of the belief it may be separated from the Oklahoma City field by a fault.

Aside from the nearby wildcats, the Oklahoma City field, now nearing its tenth anniversary, is not without interest in its own right. Big production recently was found in the dolomite zone north of the Capitol area, and big gas production was found in the shallow horizons in the south end of the field. An increase in royalty buying throughout the field wes reported, with royalty under old leases getting first choice.

Shirley Clum No. 1 Gilliland, NW quarter Section 15-12-3w, on the north rim of the dolomite zone in the Oklahoma City field, was showing for big production. It flowed 936 bbls. of oil through tubing in an 11-hour test, with 2,000,000 feet of gas daily. It was averaging around 75 to 85 bbls. of oil an hour, in the pay at 6,515 feet. Two locations west of the Clum producer, H. R. Hollenbach and others No. 1 Sinopoulo was bottomed at 6,513 feet in dolomite, acidized and flowed 350 bbls. of oil in seven hours. These are indicative of current operations in the north Oklahoma City sector, where several tests are being drilled or operators are preparing to start work.

Estimated Recovery

Estimates of future production from the Simpson zone in the City field vary greatly, ranging from 2,000,000 to 8,000,000 bbls. Productivity of the dolomite zone is a guess, but it is evident this horizon will yield much more oil, particuraly at the extreme north end of the field. The pay is spotted and some of the wells will never pay out, but others will be profitable for the producers.

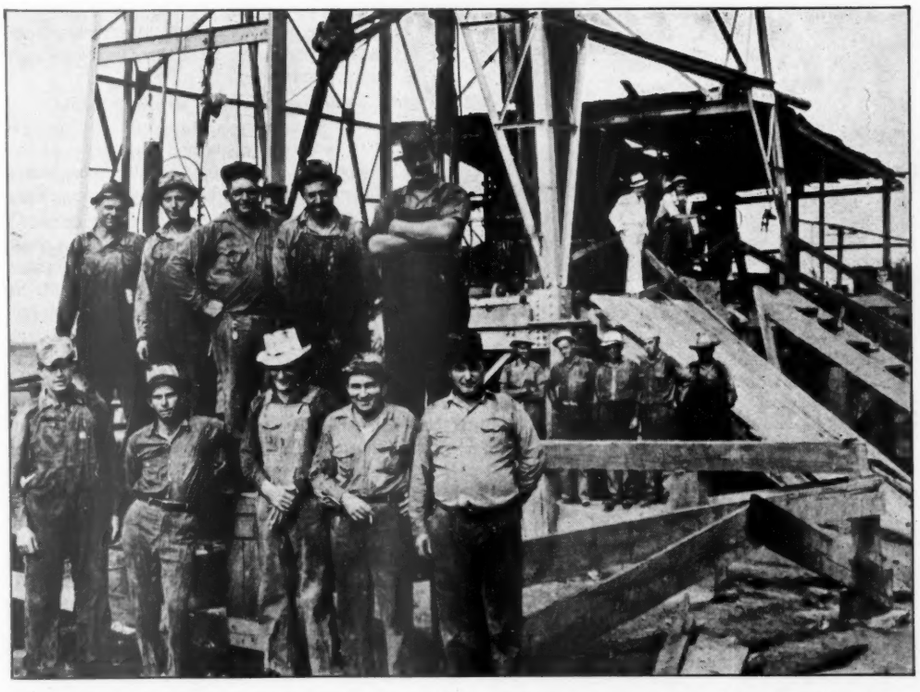
The Simpson dolomite zone is thought to extend down the entire west side of the field, ranging from a few locations to a half-mile wide. Geologists do not think it is a solid zone, as in the Wilcox sand. but that it is spotted, with production to be found in small sectors or "highs" in the zone. Developments in the north part of the field, which apparently is defined on the south and west, have proven this.

Shallower formations in the big field will be producing for a long while and will yield many more wells before they are fully developed. The Hoover, Tonkawa and Layton series are productive of considerable oil now, with an occasional new well being drilled to one of the zones and more and more oil wells being plugged back. This also is true of the Oswego-Prue formations, productive of gas.

The Cleveland and Pawhuska zones also are expected to come in for more development. The former, productive of much oil, has not been tested throughout the field, and the latter has been tested in only a few sectors.

Much of the new drilling and reworking of old wells has been spotted, but it is thought results will justify similar work throughout the entire 10-mile stretch of the field. Unless demand for Oklahoma crude shows a marked increase, development of the shallower horizons and reworking of old wells may spread over a five-year period. Development of the gas zones likewise will continue over a period of five years or more, demand for natural gas being limited as it is and with producers drilling only sufficient gas wells to meet immediate demands.

The Olson strike at Britton; the showing of oil in the Fain wildcat southwest of the City field, even though it may not be completed as a producer; and current developments in the upper pays within the field assure continued development and exploration in the Oklahoma City field and adjacent areas for some years.



The drilling crews take time out for a picture. They have just brought in Oklahoma's latest wildcat discovery well, the Olson Oil Co. and associates No. 1 Vanek, near Britton

Antitrust Attorney Proposes to Make Gasoline Public Utility

NEW YORK, Aug. 22.—Oil circles here were interested, but not surprised by the suggestion that gasoline be made a public utility offered by Thurman Arnold, assistant attorney general in charge of antitrust enforcement, in a radio address Friday night.

Mr. Arnold has been unusually successful in obtaining publicity through speeches and writing articles on his somewhat confused ideas on economics and business regulation. In addition to his radio address he had a special article in Sunday's New York Times along the same lines, urging particularly the need of the Department of Justice for larger appropriations for enforcement of the antitrust acts which he nevertheless admits have not been effective. His proposal that Congress consider gasoline as a public utility is regarded as more in line with his own ideas of business regimentation.

"The competitive struggle without effective antitrust enforcement is like a fight without a referee," he told his audience. "In such a contest, the man who puts on brass knuckles will win. This situation will not be solved by hanging mottoes of fair play on the four posts of the ring. The trouble has been that, due to inadequate policing, the referee has been absent in most sections of American industry."

In a number of industries, he said, "economic toll bridges" have been erected which serve to bar independents from their markets. Not all of these devices are illegal, he admitted, but they do give the owner the power to coerce and tax others.

"Another type of toll bridge," he said, "consists in the sole access to the market being in the hands of a few producers. Take the sale of gasoline. The very existence of the independent oil companies of America is threatened because the major oil companies stand between them and access to the market. This has happened in a way which is partly legal under our present laws and partly illegal.

"The major oil companies, by an aggressive sales policy, have acquired so many filling stations that it is very difficult for an independent to obtain a foothold.

"Then, by nation-wide advertising, they have created a situation where the public will not buy gasoline made by independents unless it is sold under the trade name of a larger oil company. One cannot criticize advertising. Yet no one can deny that the marketing system for gasoline has put the major oil companies in command of an economic toll bridge and a most wasteful one, shot through with unnecessary duplication of filling stations, advertising costs and service costs.

"The temptation to use this toll bridge to coerce others and to fix prices to turn that waste into a profit is often irresistible. We are now prosecuting major oil companies because we have evidence they have so used it.

"Such situations raise this question for Congress to consider. If a monopoly power is obtained by legal means, to what extent should the unregulated exercise of that power be allowed to private individuals? If independents could sell gasoline direct to the public, I am convinced they would have no difficulty in competing.

"Congress might well consider that the marketing of gasoline has become a public utility. This goes beyond the anti-trust laws, yet I conceive that part of the duty of an enforcing officer is to call attention of Congress to cases where the laws are inadequate."

THURMAN ARNOLD

He urged expansion of the antitrust division of the Department of Justice to permit a change of policy from sporadic campaigns against monopoly to every-day enforcement and actual control, with a policing force adequate to accomplish economic results.

Forced to undertake the administration of the antitrust statutes with a personnel of 90, which he contrasted with the force of 1,200 employes of the Securities and Exchange Commission and of the Maritime Commission and of 2,800 employes of the Civil Aeronautics Authority, Mr. Arnold was carrying his fight for a bigger division directly to the public.

"If we are going to change our policy from a series of crusades to every-day enforcement and actual control, we must have a policing force adequate to accomplish economic results.

"We will get neither of these things without public understanding of the problem because without public understanding and support, no law can be enforced. The antitrust problem must be brought to the public and not reserved for the abstract consideration of the lawyer or the economist.

"The questions before the public are these:

"Shall we continue the policy of easy acquiescence in the enforcement of our antimonopoly policy?

"Can we content ourselves with the dramatization of the ideal of competition by an occasional case while thousands of offenses are ignored? This has been the policy in the past."

So long as the personnel of the Department of Justice is so small that violations of the antitrust laws must be ignored, because there is no one to investigate or try them, he said the Government has no practical control of the situation.

The speaker declared that attempts to clarify the law in the abstract while violations go uncurbed are useless. He apparently would have Congress go beyond the Sherman Act to enable a greater degree of control over the oil industry.

One scheme that has been suggested in Washington for dealing with monopolies proposes division of the country into a number of industrial regions; each under an administrator at the head of a group of men representing (1) the public (2) management (3) labor and (4) stockholders, who would serve with the directorate and managements.

The economic structure, he said, consists of two separate worlds. The first is a world of organized industry and the second is a world of small, unorganized business, farmers, laborers and consumers.

The first group, Mr. Arnold declared, has too much power to maintain high prices, no matter how much the demand for the product declines. The result, he said, is that production drops, men are laid off and this, in turn, lowers the purchasing power and makes the demand drop still further.

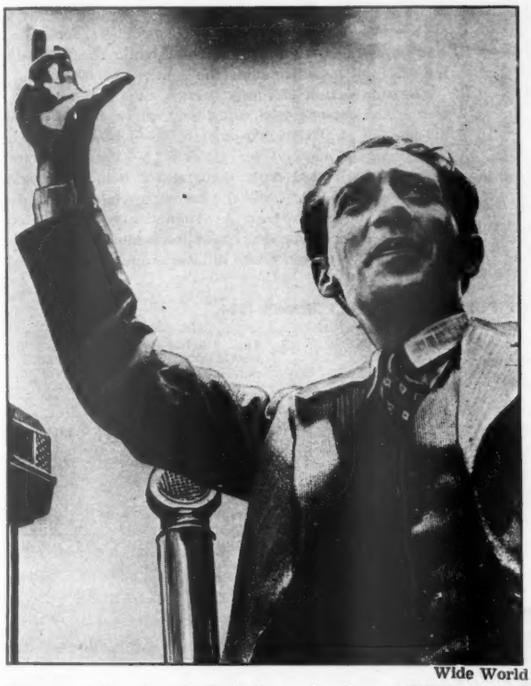
In the second "world," he said, unlimited competition still exists and cannot be controlled. In it are low flexible prices, large production and, often, he went on, labor standards at starvation levels.

With the capacity for producing an abundance of everything, Mr. Arnold declared, the "problem is how to unleash the productive forces without taking the short and easy road to industrial autocracy."

"The antitrust laws do not themselves fill the whole picture," he said. "The government is stepping into the breach today to provide the second or competitive world with more purchasing power. It is spending money on relief, and to aid home owners, in new construction."

Newest Purchase of Mexican Crude May Force Action

By H. STANLEY NORMAN



Wide World

Vincente Lombardo Toledano, leader of C.T.M. labor union which fostered expropriation by making demands beyond ability of companies to pay

NEW YORK, Aug. 22.—Eastern States Petroleum Co.'s purchase of a "substantial quantity" of Mexican oil, confirmed last week by the firm president, Richard B. Kahle, emphasized the importance of reaching an early decision between the United States Government and that of Mexico on the expropriation question.

That arbitration of the petroleum expropriation issue is out of the question appears certain. The 17 oil companies whose properties were seized by President Cardenas' decree March 18 cannot submit the issue of values to arbitration. To do so would contribute to their own spoilation and would be an admission that expropriation as a principle had been accepted. To permit the record to show that the United States Government and its nationals accepted expropriation as a principle would be an open invitation to other foreign countries to follow the same example.

In confirming its purchase of Mexican oil last week, Eastern States Petroleum Co. issued the following statement in New York:

"Eastern States Petroleum Co. confirms that it has purchased a substantial quantity of nonexpropriated Mexican crude oil for refining at its Houston, Tex., refineries, the contract covering an extended period.

"The company states that the product will be marketed in both the export and domestic market. Terms and conditions have not been revealed. The first vessel to lift cargo, the S.S. R. W. McIlvane, is arriving in Mexico today (August 17)."

Rumors in oil circles on the volume involved in the "substantial quantity" ranged from 100,000 to 1,000,000 bbls., but greatest credence is placed on the former figure.

Ever since the expropriation decree was issued five months ago the oil companies have declined to recognize a distinction between expropriated and nonexpropriated oil. Under this consideration it was regarded possible that Standard Oil Co. of New Jersey may take some legal action to determine whether Mexican oil can legally be sold in this country with the question of expropriation and indemnification unsettled. Dispatches from Houston, Tex., report that a deed of trust for $500,000 was filed with the county clerk there last Thursday (August 11) by Mr. Kahle and the secretary of Eastern States in favor of the Mexican national oil monopoly.

Transportation of Mexican petroleum through certain European ports met a new obstacle last week when Mexican Eagle Oil Co. obtained court permission at Rotterdam to seize petroleum from its expropriated properties which arrived there aboard a Dutch tanker. The court will later decide whether the company's right of seizure can be maintained.

In view of the sales two or three weeks ago of Mexican oil to Japanese interests, the earlier transaction between the Mexican government and William R. Davis & Co. of New York followed by last week's deal with a domestic company, the State Department at Washington is looked to for another note on the expropriation subject in a few days. It was pointed out that Mexico's reply to the United States note in July was received by this Government on August 3. Upon receipt of the Mexican reply, Secretary Hull and other State Department officials declined to comment until the official translation was available and until sufficient time for thorough analysis had elapsed.

Stronger Footing

The oil seizures stand on an even stronger footing for the United States than the land seizures. The oil investment was invited by Mexico and encouraged by the United States. The present seizures involve not recent concessions made by Mexico, but properties owned and leased by the American and British companies for upwards of 20 years, antedating the change in the Mexican constitution which undertook the nationalization of subsoil petroleum deposits. After long diplomatic negotiations, Mexico and the United States agreed, and the Mexican Supreme Court decisions confirmed, that this subsoil petroleum was the property of the companies.

The first effort to deprive British and American oil companies of their Mexican properties was made by Carranza and the more radical framers of the 1917 constitution.

In Article 27 they declared: "In the nation is vested the direct ownership of . . . petroleum, and all solid, liquid or gaseous hydrocarbons." The declaration was limited in the same Article 27, which said: "Private property shall not be expropriated except for reasons of public utility and subject to payment of indemnity." In addition to this assurance, Article 14 declared that "no law shall be given retroactive effect to the prejudice of any person whatsoever."

There have been two other subsequent guarantees of prime importance. One of these is known as the Bucareli conference, or the Warren-Payne agreement. Under its terms Mexico agreed that the American-owned properties in Mexico could not be expropriated without payment of "the just value thereof at the time of taking" and "on the basis of immediate compensation in cash."

The other guarantee was by the Mexican Supreme Court, which, in 1921, ruled that Article 27 "is not retroactive and does not affect preexisting rights legally acquired."

Wide World

One of Mexico's active oil shipping terminals prior to confiscation

Crude Requirements Cut Due to Gasoline Stock Estimates

The daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the market demand in September, 1938, is 3,444,300 bbls. This is 6,200 bbls. higher than the estimate for August, 1938, 221,700 bbls. (6 per cent) less than the daily average production for September, 1937, and 7 per cent less than the demand for domestic crude for that month. This decrease in the estimated demand is due principally to larger estimates of gasoline stock withdrawals.

Daily average crude oil production and runs to stills during the four weeks July 2 to July 30, averaged 3,334,000 bbls. and 3,200,000 bbls., respectively. During this period stocks of refinable and heavy crude declined 3,029,000 bbls. However, foreign stocks increased 92,000 bbls., making a decline in domestic grades of 3,121,000 bbls., or 111,000 bbls. daily. The addition of this amount to production gives 3,445,000 bbls. as the apparent daily average demand for domestic crude oil during this period, compared with 3,398,100 bbls. estimated by the bureau for the month of July.

TABLE 1—ESTIMATED DAILY AVERAGE CRUDE OIL OIL DEMAND BY STATES

(As no changes in crude oil stocks are involved in these estimates, they represent demand rather than production)

State—	Forecast September, 1938	Forecast August, 1938	Actual production June, 1938
Texas	1,398,600	1,377,800	1,212,000
California	638,300	649,300	672,300
Oklahoma	528,300	529,700	430,700
Louisiana	255,300	256,100	260,500
Kansas	168,000	169,300	156,800
New Mexico	111,600	112,300	86,900
Wyoming	65,600	62,200	57,200
Michigan	57,000	60,000	54,700
Arkansas	53,700	53,900	42,400
Pennsylvania	47,800	50,100	47,800
Illinois	49,000	45,800	45,400
Kentucky	16,000	14,500	16,200
New York	14,800	15,500	13,900
Montana	14,000	13,900	14,700
West Virginia	9,900	9,900	10,000
Ohio	9,200	10,000	9,500
Colorado	4,600	5,300	4,000
Indiana	2,600	2,300	2,800
Total	3,444,300	3,438,100	3,139,200

Motor Fuel

Domestic demand.—The estimate for domestic motor fuel demand for September, 1938, is 47,000,000 bbls., or 0.5 per cent lower than the actual demand for September, 1937.

Exports.—Motor fuel exports have been estimated at 4,400,000 bbls., 100,000 bbls. less than was estimated for August and 56,000 bbls. less than the actual exports for September, 1937.

Stocks.—Stocks of finished and unfinished gasoline amounted to 80,531,000 bbls. on June 30. According to statistics of the American Petroleum Institute, these stocks declined approximately 4,500,000 bbls. during July, bringing them to approximately 76,000,000 bbls. as of July 31. If the bureau's estimate of 6,300,000 bbls. as the August withdrawal materializes, there will be a little less than 70,000,000 bbls. of gasoline on hand as of August 31, compared with about 67,000,000 bbls. on the same date in 1937. For September, 1938, the bureau estimates a further reduction of 3,700,000 bbls., compared with an actual withdrawal of about 1,400,000 bbls. in September, 1937. Stocks of gas oil and distillate fuel oil on June 30 were 20 per cent higher than last year, while residual fuel oil stocks were 18 per cent higher, indicating the possibility of a substantial reduction in crude runs in the last quarter.

Gasoline production.—Benzol and direct sales and losses of natural gasoline have been estimated as 900,000 bbls., making the estimated refinery production of gasoline 46,800,000 bbls. This is distributed among the various districts as follows (thousands of barrels): East Coast, 6,290; Appalachian, 1,630; Indiana-Illinois, 8,250; Oklahoma, 2,710; Kansas, 2,550; Inland Texas, 3,890; Texas Gulf Coast, 11,750; Louisiana Gulf Coast, 1,440; North Louisiana-Arkansas, 940; Rocky Mountain, 1,170; California, 6,180.

Crude Petroleum

Runs to stills.—Natural gasoline consumption at refineries in September is estimated as 8.5 per cent of the total gasoline production, or 3,980,000 bbls. The yield of straightrun and cracked gasoline is estimated as 44.4 per cent compared with 44.2 per cent for August, 1938, and an actual of 43.5 per cent for September, 1937. The application of the current yield to the estimated straightrun and cracked gasoline production of 42,820,000 bbls. gives refinery crude oil requirements as 96,430,000 bbls., or 3,214,000 bbls. daily.

Foreign crude runs.—Foreign crude runs to stills are estimated at 2,400,000 bbls., 100,000 less than the August estimate.

Exports, fuel, and losses.—The estimate for crude oil exports has been decreased 700,000 bbls. from the August estimate to 7,000,000 bbls., while the estimate for fuel and losses remains the same, 2,300,000 bbls.

The subtraction of foreign crude runs and the addition of the exports, fuel, and losses, gives a total crude oil demand of 103,330,000 bbls., or 3,444,300 bbls. daily.

Crude oil demand by states.—The breakdown of the total estimated daily demand for domestic crude oil of 3,444,300 bbls. gives the accompanying market demand by states of origin. As demand may be supplied either from stocks or from new production, contemplated withdrawals from crude oil stocks must be deducted from the bureau's estimate of demand to determine the amount of new crude to be produced.

TABLE 2—SUMMARY OF FORECASTS FOR SEPTEMBER 1938

	Forecast Sept., 1938	Forecast Aug., 1938	Actual Sept., 1937
Demand for motor fuel*:			
Domestic demand	47,000,000	50,000,000	47,245,000
Exports	4,400,000	4,500,000	4,456,000
Total	51,400,000	54,500,000	51,701,000
Supply of motor fuel:			
Straightrun and cracked gasoline production	42,820,000	43,800,000	45,033,000
Natural gasoline used at refineries	3,980,000	3,400,000	4,490,000
Total refinery production	46,800,000	47,200,000	49,523,000
Benzol and other natural gasoline	900,000	1,000,000	801,000
Imports	.....	.....	1,000
Decrease in finished stocks	3,700,000	6,300,000	1,376,000
Available supply	51,400,000	54,500,000	51,701,000
Crude oil requirements:			
Per cent yield of gasoline from crude	44.405	44.207	43.51
Refinery crude required	96,430,000	99,080,000	103,494,000
Foreign crude runs	2,400,000	2,500,000	2,519,000
Exports	7,000,000	7,700,000	6,602,000
Fuel and losses	2,300,000	2,300,000	3,385,000
Total demand for domestic crude	103,330,000	106,580,000	110,962,000
Daily average	3,444,300	3,438,100	3,698,700
Decrease in domestic stocks	.....	.....	982,000
Actual production	.....	.....	109,980,000
Daily average	.....	.....	3,666,000

*The term motor fuel as used in this report includes gasoline, naphtha, and benzol used for all purposes, but does not include heavier distillates used in the operation of tractors or burned in diesel engines.

Anthracite Institute Complains Of Venezuelan Oil

Fuel oil refined from Venezuelan petroleum accounts for a large part of the oil competition to which the anthracite industry has lost 13,000,000 tons of production annually in the New England and Middle Atlantic states, according to Louis C. Madiera, executive director of the Anthracite Institute. Mr. Madiera states estimates show that 4 bbls. of oil displace one ton of coal.

SPECTACULAR GAS WELL FIRE

Magnolia Oil Co. No. 2 C. R. Jones, Moore County, Texas, while blaze was at its height

STATE CAPITALS

OKLAHOMA

PRODUCERS AND PURCHASERS of crude oil in Oklahoma met with W. J. Armstrong, state conservation officer, on August 24 at the state capitol in Oklahoma City to discuss market demand of crude in September. Mr. Armstrong in his notice of the coming meeting said: "Many matters of vital importance to the oil industry will be discussed at this open meeting with reference to the conservation of oil and gas in this state. We hope that each purchaser will have a representative here and as many producers as possible will be represented."

The Corporation Commission will meet at 9 a.m. on August 25 to hear the recommendations of the conservation officer as to September allowable, and announce its decision on the recommendations.

NATURAL GAS RATES in 23 cities and towns in Oklahoma served by the Community Natural Gas Co. were lowered by the Corporation Commission in an order issued on August 22.

The rates, estimated to save consumers $25,000 to $60,000 a year, will go into effect with meter readings taken on or after September 20.

The order cut the rate in Achille, Caddo, Davidson, Davis, Durant, Frederick, Hastings, Hugo, Loco, Manitou, Marietta, Maysville, Mountain Park, Paoli, Pauls Valley, Purcell, Ryan, Snyder, Sulphur, Tipton, Waurika, Wayne and Wynnewood.

The new schedule is 20 cents per 100 feet for the first 600 feet, with rate for additional gas ranging from 55 to 65 cents per 1,000 feet, depending on the average annual individual consumption in each town. The old rate was $1.35 for the first 1,000 feet, and 67½ cents per 1,000 for the remainder.

The compromise settlement on the eight-year-old rate litigation was agreed upon last week.

TEXAS

SATURDAY SHUTDOWNS and a continuation of Sunday shutdowns were believed to be assured during September as a result of the break in East Texas crude prices last Saturday. After holding a brief proration meeting Friday, August 19, preliminary to fixing the September allowables, members of the Railroad Commission stated such action might be necessary as a means of balancing production with demand. The cut in East Texas crude on the following day is regarded as making such action inevitable. Release of the September order, however, is not expected until after the runoff primary next Saturday, August 27, as Chairman C. V. Terrell is up for reelection.

The Saturday shutdown may be ordered at any time, it was stated, in view of the fact that the end of the heavy consumption season is near and that the crude market is none too stable. Pipe line proration in K.M.A. and in the West Texas fields, the number of unconnected wells in East Texas and the request for a 3,000-bbl. reduction in Cayuga allowables were pointed out as indicative of a declining market.

Statistics showing that the Sunday shutdown in August had failed to keep Texas within the consumer demand figure were also presented. The Bureau of Mines estimate of market demand for Texas crude for September is 1,398,600 bbls. daily, compared to 1,377,800 bbls. for August. The Texas allowable on August 18 reached 1,637,802 bbls., but through underproduction and Sunday shutdowns the average daily production was 1,413,736 bbls., some 15,100 bbls. over the bureau's figure.

Tide Water Associated Oil Co., sole purchaser of Cayuga crude, through A. R. Gahn asked that the allowable there be cut from 10,633 to 7,000 bbls. daily for September, because the indicated demand for this crude is but 6,000 bbls. daily. He said storage has built up to 870,000 bbls. when less than 300,000 is needed. Operators objected to the cut and a special hearing was set for August 30 to consider the Cayuga allowable.

Only direct suggestion for a five-day week came from R. H. Foster of Landreth Production Corp., who asserted pipe line proration still existed in West Texas and asked the commission to return to Saturday shutins until the pipe lines could handle the full measure of allowable oil. Only protest concerning East Texas was that of one operator who said a pipe line was refusing to take his oil, the pipe line company claiming the oil was not marketable due to too much basic sediment and water. J. Ed Erwin asked that the commission continue the current 32 bbls. allowable for K.M.A. wells.

Judge C. L. Black, Austin attorney, brought out testimony in support of Ohio Oil Co.'s plea to raise the company's allowable in the Yates pool, it now being 18,575 bbls. daily after being pulled down from 35,000 bbls. Gist of the evidence was that the lower allowable is causing waste; that under the higher allowable the gas-oil ratio was 173 per bbl. of oil as compared with 237 under the lower figure.

GENERAL AMERICAN OIL CO. filed suit in the Fifty-third District Court against the Railroad Commission of Texas, seeking a court order granting it the right to move more than 83,000 bbls. of crude into commerce without a tender from the commission. The petition charged the commission has consistently ignored applications for tenders filed by General American for the right to move into commerce oil which is now located in certain tanks in Gregg and Upshur counties. The suit was filed by L. H. Engleking, Austin attorney.

A TEMPORARY SPACING RULE for the Caddo limestone horizon in the James, Knox and Burns pools, Young County, was set at 40 acres by a recent order of the Railroad Commission. Wells must be spaced at least 660 feet from lease lines and 1,320 feet apart.

HEARING ON THE AGUA DULCE FIELD, originally set by the Railroad Commission for August 16 at Austin, Tex., has been postponed until August 30 so that operators may complete studies being made on various operating problems in the field. Special emphasis will be placed on blowouts at the meeting.

CALIFORNIA

THE CENTRAL COMMITTEE of California Oil Producers, official curtailment group, will meet within a few days to set the allowable for September, and it appears almost a certainty that the committee will continue its downward revision started a few months ago. This projected reduction in allowable is made necessary by the resumption of production by some operators in the Santa Maria Valley field which has caused state production to swing upward again, and also because the demand begins to slide off quite rapidly soon after Labor Day, which this year will be September 5. Schools resume classes in most Pacific Coast areas on September 12, with some starting several days sooner, and thus most of the travel will be out of the way early in the month. In California the beach season closes on Labor Day, and this will also cut down gasoline demand. A slight improvement has been noted in general business, but not enough to make any appreciable change in demand.

LOUISIANA

AN INTERPRETATION by the Shreveport office of the Conservation Department of a recent order affecting the Lisbon field, namely that all oil must be metered, greatly relieved Lisbon operators last week. The interpretation was to the effect that the metering was to be done where the Gulf Oil Corp. and Caddo Crude Oil Purchasing Co. lines left the field. Operators had feared the order meant that each must meter his own oil at the well, which would have meant an added expense.

Acme

State capitol, Topeka, Kansas

Three Independents Reduce Price of East Texas Crude 15 Cents

FORT WORTH, Tex.—A 15-cent cut in the price of East Texas crude was announced when the East Texas Refining Co. set a new posting of $1.20 per barrel, effective 7 a.m., August 20. The company buys about 4,800 bbls. a day and produces about 860 bls. a day. The cut was met by Danciger Oil & Refineries, Inc., late Saturday. Danciger buys as much or more than the East Texas Refining Co. On August 23 the Premier Oil & Refining Co., which buys about 2,200 bbls. per day, met the lowered price.

In announcing the cut the East Texas company stated, "This is an adjustment and an equalization to a price which this company can pay for East Texas oil and is in line with the price being paid by large purchasers of crude in other East Texas fields and for oil being imported into Texas from Arkansas and Louisiana fields.

"The previous price has caused a reduction in demand for East Texas oil. At the present time this company is unable to find buyers willing to purchase the oil from it, which together with the low selling price of gasoline and fuel oil makes the adjustment and equalization necessary to meet competition from refiners and marketers using oil from other fields and other states."

Such a price reduction as made by the East Texas company has been hanging fire for several weeks, recently gaining momentum as more oil was imported from North Louisiana and Arkansas and as the East Texas crude lost some of its Gulf Coast markets to these lower-priced crudes. Then on August 1 when approximately 500 well connections were dropped, the situation became acute. Little change was seen during the first three weeks of August. Some of the larger companies took over a few of the unconnected wells, but these were offset by loss of other connections.

Price of East Texas crude has remained unchanged at $1.35 since May 22, 1937, when a 10-cent increase was posted. The general slump in business since then has greatly affected prices of refined gasoline so that the high price of East Texas crude forced many operators to close their plants last winter and spring as they were unable to operate at a profit.

Independent crude purchasing companies in the East Texas field account for approximately one-tenth of the total output of some 450,000 bbls. daily. Thus if all the independent companies adopt the lower price it is expected that the major companies will be forced to take like action.

Final Indiana Stock Purchase Plan Is Liquidated

The fifth and final stock purchasing plan conducted by Standard Oil Co. of Indiana was liquidated last week with distribution of 301,509 shares to 12,977 employes. A cash balance of $187,360 was also divided.

For the 301,509 shares trustees paid $10,019,460, or an average of $33.23 a share over three years. Employes contributed $6,086,760, and dividends of $756,658 earned during the trusteeship were added. The balance was provided by company contributions totaling $3,043,380 at the rate of 50 cents for each dollar invested by employes and by a general fund of $320,022 which accumulated as employes withdrew and relinquished their share. Although 19,916 employes took part in the plan at one time or another, 6,939 dropped out before the finish. Indiana directors decided early this year not to ask the stockholders to authorize another plan of the same nature.

Pennsylvania Oil Investigation Will Resume Its Inquiry

HARRISBURG, Pa.—The Pennsylvania oil investigating committee, which was killed by a court decision because it was created by a resolution rather than an act of the legislature, has been revived by the enactment of a bill and Governor Earle has reappointed three members of the former commission, with the addition of two new members. Judge Ralph H. Smith, of Pittsburgh, will resume his position as chairman. The new members are W. H. Godfrey, of Germantown, and John E. McComb, of Rouseville.

The new law specifically designates the commission as the agency of the legislature to determine if state regulation of the oil industry is necessary and to submit recommendations to the legislature.

Southern Oklahoma Operators Appeal to Senator Thomas

WASHINGTON, D. C.—Federal investigation of proration was demanded by southern Oklahoma stripper well operators and business men but Senator Elmer Thomas expressed doubt such a probe would be proper. He forwarded the protests to the Bureau of Mines, but added that the final proration allowables are set by state officials.

Protests were received from Healdton, County Line, Graham and Wilson, Okla., Thomas said. The protests declared thousands of men would be thrown out of work and many stripper wells abandoned and lost if proposed allowables went into effect.

"Conservation can best be achieved through continuous operation of the small stripper wells, with greater curtailment of wells operating in more productive fields," said Senator Thomas. "If the stripper wells are once forced to close down they would forever lose their value because water would soon fill the oil basins."

Iowa Plans to Add a Cent To State Gasoline Tax

AMES, Iowa.—Plans for levying another 1 cent of state gasoline tax were discussed here by members of the Iowa State Planning Board and the Iowa League of Municipalities. The idea is to split the additional cent three ways, one third going to cities and towns, for maintenance of streets, one-third going to counties for upkeep and secondary roads, and one-third going to the state highway commission for matching federal funds on special projects. The municipalities league had previously proposed that a half-cent tax be added for distribution among cities.

Another meeting is to be held at Mason City soon.

Shipment of Oil Tank Sections For Sakhalin Island

LOS ANGELES, Calif.—First shipment of a reported 20,000-ton order of oil tank sections destined for Sakhalin Island off the Siberian coast is due to go out shortly on the freighter Michigan, which is loading at the East San Pedro terminal of Williams, Dimond & Co., agents for the line.

The Michigan's load is expected to exceed 4,000 tons. The steel has been made by Bethlehem's Huntington Park plant, and is the first big shipment of oil tank materials to Russia from Los Angeles Harbor. Amtorg, the Soviet trading company, arranged the purchase.

Venezuelan Tax May Be Cut But Not Eliminated

WASHINGTON, D. C.—It seems likely that negotiation of a reciprocal trade agreement between the United States and Venezuela will not result in wiping out the present excise taxes on importations of crude and fuel oil of one-half cent a gallon. Henry F. Grady, chairman of the Tariff Commission, said all that could be done by the reciprocal trade agreement was to change the rate by 50 per cent. The excise tax could not be wiped out, but might be lowered to one-quarter cent per gallon, or increased to 31½ cents per barrel.

There is little prospect of an increase to the indicated higher rate by action of the reciprocal trade agreement, but, rather that the rate will be left as it stands.

Nomenclature Committee Names Two South Texas Pools

Two additional oil pools have been named in South Texas by the Oil Field Nomenclature Committee of the South Texas Geological Society, Ira Brinkerhoff, chairman, announces.

The area opened by Collins & Co. No. 1-A Givens, in the Santa Cruz Survey of Starr County, has been named the La Reforma pool. The new oil area opened by Schimmell No. 2 Kountz, in Survey 5, of McMullen County, has been named the San Jose pool.

Cummings Seeks to Intervene In Tideland Litigation

LOS ANGELES, Calif.—Threatened intervention by the United States Government in 21 injunction suits brought in 1933 against whipstock oil drillers in the Huntington Beach tideland pool was rejected by Superior Judge L. N. Turrentine of San Diego.

I. D. Brett, assistant federal attorney, said Attorney General Cummings wired him to have signing of the stipulated judgments delayed 30 days for investigation to determine whether federal interests were concerned. The judgments are being stipulated because the companies now pay a royalty to the state for production from the underwater pool.

Deputy State Attorney General L. D. Campbell's contention that the federal Government was making "a last minute effort to get in the side door" was sustained by the court.

N.L.R.B. Orders Elections In California Cases

WASHINGTON, D. C.—The National Labor Relations Board will conduct two elections in California within 30 days, to settle questions of union representation among employes of the Shell Oil Co.

One election will be conducted for company machinists to determine whether they want to be represented by the Oil Workers International Union (C.I.O.). The other will be to settle a contest between the oil workers union and the International Brotherhood of Boiler Makers (A.F.L.) which deadlocked 26 to 26 in a previous election.

New Mexico Lease Sale

New Mexico's lease sale held in the office of the Commissioner of Public Lands, Frank Worden, on August 10, netted the state a total of $15,567.84. Bids were received on 20 of the 30 tracts offered. Highest bid offered was $5,142 by Phillips Petroleum Co. for Tract 14, an 80-acre lease. Lowest successful bid was paid for Tract 3 by Roy G. Barton and totaled $126.66. Tracts varied in size from 1,560.40 acres to 80 acres.

Lion Oil Refining Company Plans Schuler Development

NEW YORK.—T. H. Barton, president of Lion Oil Refining Co., announced completion of a deferred loan of $3,200,000 with Central Hanover Bank & Trust Co., to be used to provide additional working capital and funds for completion of a development program for the Schuler field in Union County, Arkansas. Present plans call for two years of drilling. The company has 12 active operations. The field, producing from three levels, was discovered over a year ago by Lion and the company has completed about 30 producers since.

Lion, with headquarters at El Dorado, Ark., where it operates a refinery, recently gained control of Atlas Pipe Line Co. at Shreveport, La., through purchase of a majority of the common stock.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Unmasked

Once more we have an official of the national administration calling for federal control of the oil business. Thurman Arnold, assistant attorney general in charge of antitrust law enforcement, told a radio audience Friday night that "Congress might well consider that the marketing of gasoline has become a public utility."

In other words, that Congress should proclaim it so and proceed to set up governmental machinery for the regulation of the sale and price of gasoline.

Why? Because, Mr. Arnold says, "the major companies by an aggressive policy have acquired so many filling stations that it is very difficult for an independent to obtain a foothold."

Flatly, on the contrary, as oil men generally know, the trend for some years past has been for major companies to retire from filling station operation, turning them over to individual dealers.

But aside from that, how does Mr. Arnold suppose that turning the gasoline business into a public utility could help the independents "whose very existence," he says, "is threatened?"

The basis of every public utility is monopoly in its field. Regulation means the elimination of competition. Where would the independents, including the price-cutters, come in under Mr. Arnold's utility?

Another curious notion he had was that "by nation-wide advertising the major companies created a situation where the public will not buy gasoline made by independents unless it is sold under the trade name of a larger company."

This is true of cigarets, toothpastes, soft drinks, razor blades, and a host of commodities in common use, but no one thinks these articles should be proclaimed public utilities with sale and price regulated by act of Congress simply because their manufacturers advertise.

If those two arguments are the best Mr. Arnold can offer for his public utility proposal it was not worth bringing up.

He could not accuse the industry of gouging the public. There is not a word in his reported remarks suggesting that the consumer is not being furnished a satisfactory gasoline at a reasonable price anywhere he needs it.

The oil industry certainly cannot be charged with levying excessive toll on a product which it is selling so cheaply that the state and federal governments can add a 35 per cent tax to the price without protest from the consumer.

If the majors dominate the industry, as Mr. Arnold imagines, why do they allow it to overproduce crude, gasoline and fuel oil and break down prices, sometimes even below cost?

It has been suggested that Mr. Arnold merely threw in this gasoline idea to catch the public ear while he put across his plea for a larger appropriation for his antitrust division. It may seem difficult to take either his utility notion or his arguments for it seriously, but the danger is that because of his position Congress or the public may think he has something when he hasn't.

His pronouncement is of particular significance in view of administration plans for antimonoply legislation at the next session.

And on this point it is important to note that his general position is a further unmasking of the socialistic trend of the administration. While he repeats the usual formula about preserving competition and protecting the independents, what he really wants is a governmental regimentation of business far beyond the antitrust laws.

That is the real issue.

Programs and Meetings

A.A.P.G. Mid-Year Meeting, El Paso, Tex., September 27-October 2

The mid-year meeting of the American Association of Petroleum Geologists to be held in El Paso, Tex., September 27-October 2, under the sponsorship of the West Texas Geological Society of Midland, will include pre- and post-convention trips covering the most interesting geology of the area, including parts of one of the most complete Upper Paleozoic sections and, in particular, the most complete marine Permian section in the world.

Technical sessions will be held in the ballroom of the Cortez, convention headquarters hotel, on September 29 and 30.

The program given herewith is subject to change. Further information may be obtained from the chairman of the convention committees at Midland.

General chairman: Berte R. Haigh, University Lands, Midland. Assistant general chairman, in charge of A.A.P.G. affairs: Cary P. Butcher, Tide Water Associated Oil Co. Assistant general chairman, in charge of West Texas Geological Society affairs: H. A. Hemphill, Magnolia Petroleum Co. Technical program: Ronald K. DeFord, Argo Oil Corp. Field trips: John Emery Adams, Standard Oil Co. of Texas. Transportation: Vaughn C. Maley, Humble Oil & Refining Co. Reception: Fred H. Wilcox, Magnolia Petroleum Co. Entertainment: Paul F. Osborne, Tide Water Associated Oil Co. Hotel arrangements: Georges Vorbe. Golf: J. N. Gregory. Ladies entertainment: Mrs. Maurice Schwartz and Mrs. Paul F. Osborne. Finance: W. D. Anderson, Amerada Petroleum Corp. Publicity: James FitzGerald, Jr., Skelly Oil Co.

Except for first two papers, the chronological order of presentation of technical papers has not been definitely arranged:

Ed W. Owen (L. H. Wentz, Oil Division, San Antonio): An introductory paper covering the area and problems that will be discussed in detail throughout remainder of the program.

James FitzGerald, Jr., and W. C. Fritz (Skelly Oil Co., Midland), E. Hazen Woods (Sinclair Prairie Oil Co., Midland), and Robert I. Dickey (Stanolind Oil & Gas Co., Midland): "Cross Sections of Central Basin Platform."

M. G. Cheny (consulting geologist, Coleman, Tex.): "Geology of North-Central and Central Texas."

Louis V. Olson (American Smelting & Refining Co., El Paso): "Aerial Photography for Geological Exploration."

Cary P. Butcher (Tide Water Associated Oil Co., Midland): "The Guadalupe Mountains as They Look to the Aerial Geologist."

Ronald K. DeFord (Argo Oil Corp., Midland), George D. Riggs and Neil H. Wills (consulting geologists, Carlsbad, N. Mex.): "Surface and Subsurface Formations, Eddy County, New Mexico."

George A. Kroenlein (consulting geologist, Lovington, N. Mex.): "Salt and Potash in the Upper Castile Formation of Southeast New Mexico."

Philip B. King (U. S. Geological Survey): "Relation of Permian Sedimentation to Tectonics in the Guadalupe Mountain Range."

E. Russell Lloyd (consulting geologist, Midland): "Theory of Reef Barriers."

Lincoln R. Page (University of Colorado, Boulder): "Stratigraphy, Eastern Midland Basin, Texas."

Taylor Cole (University Lands, Midland): "Notes on the Black Shale Basin of West Texas."

Frank E. Lewis (consulting geologist, Midland): "Stratigraphy of the Upper and Middle Permian of West Texas and Eastern New Mexico."

John W. Skinner (Humble Oil & Refining Co., Midland): "Upper Paleozoic Section of the Chinati Mountains, Presidio County, Texas."

E. H. Sellards (Bureau of Economic Geology, Austin): "Early Paleozoic Formations in Texas."

Lloyd A. Nelson (College of Mines and Metallurgy, El Paso): "Paleozoic Stratigraphy of the Franklin Mountains of West Texas."

Claude E. Needham (New Mexico School of Mines, Socorro): "Correlation of the Pennsylvanian Rocks of New Mexico."

Morris A. Elms (Phillips Drilling Co., San Antonio): "Volcanics of the Buck Hill Quadrangle, Brewster County, Texas."

W. D. Anderson and James R. Day (Amerada Petroleum Corp., Midland): "Monument Field, Lea County, New Mexico."

H. G. Walter (The Texas Co., Hobbs, N. Mex.): "Vacuum Field, Lea County, New Mexico."

Sam C. Giesey and Frank F. Fulk (Stanolind Oil & Gas Co., Midland): "North Cowden Field, Ector County, Texas."

E. H. Powers (Gulf Oil Corp., Midland): "Sandhills Field, Crane County, Texas."

National Petroleum Association Atlantic City Program

The thirty-sixth annual meeting of the National Petroleum Association to be held at the Traymore Hotel, Atlantic City, N. J., September 14, 15 and 16, will be addressed Wednesday afternoon, September 14, by Senator Joseph F. Mahoney, of Wyoming, chairman of the National Economic Committee, or monopoly investigating committee. Others on the program will be:

SEPTEMBER 14

Afternoon: Charles J. Brand, executive secretary of the National Fertilizer Association, "The Development and Significance of American Trade Associations."

H. O. Forest and J. T. Dickinson, W. M. Kellogg Co., and W. B. McCluer, Bradford, Pa., Kendall Refining Co., "Propane Dewaxing and Deresining Pennsylvania Lube Oil Stocks."

Evening: Meeting of N.P.A. trustees.

SEPTEMBER 15

Afternoon: Reports by M. C. Mallon, Harry S. Elkins and Joseph E. Keller.

Joseph E. Pogue, Chase National Bank, "Petroleum Economics and the General Business Situation."

Turner Catledge, New York Times, and Carle C. Conway, president, Continental Can Co., "Some Washington Observations."

Evening: Fellowship banquet.

SEPTEMBER 16

Morning: Seaview breakfast as guests of Ethyl Gasoline Corp.

N. H. Weber, Pure Oil Co., vice president of the association, will preside on the opening day, and H. A. Logan, Warren, Pa., United Refining Co., on the second day.

National Lubricating Grease Institute Announces Meeting

The National Lubricating Grease Institute will hold its sixth annual convention at the Stevens Hotel, Chicago, October 3 and 4. In conjunction with the convention there will be an exhibition by associate members. Arrangements have been made to present a number of papers by nationally known engineers on grease manufacture, application and grease dispensing equipment.

CALENDAR

August

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS, Pacific Coast meeting, Spokane, Wash., Aug. 31-Sept. 3.

September

AMERICAN CHEMICAL SOCIETY, Milwaukee, Wis., Sept. 5-9.

NATIONAL PETROLEUM ASSOCIATION, Atlantic City, N. J., Hotel Traymore, Sept. 14-16.

PACIFIC COAST GAS ASSOCIATION, Santa Barbara, Calif., Biltmore Hotel, Sept. 14-16.

NATIONAL INDUSTRIAL ADVERTISING ASSOCIATION, Cleveland, Ohio, Sept. 21-23.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, midyear meeting, under direction of West Texas Geological Society, El Paso, Tex., Sept. 27-Oct. 2.

October

NATIONAL LUBRICATING GREASE INSTITUTE, Chicago, Oct. 3-4.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Petroleum Division, San Antonio, Tex., Oct. 5-7.

SOCIETY OF AUTOMOTIVE ENGINEERS, National Regional Fuels and Lubricants meeting, Tulsa, Oct. 6-7.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Minerals Division, Knoxville, Tenn., Oct. 6-8.

NATIONAL BITUMINOUS CONFERENCE, sponsored by W.P.R.A. and Montana and Mississippi Highway Departments, Biloxi, Miss., Edgewater Beach Hotel, Oct. 10-13.

AMERICAN GAS ASSOCIATION, Atlantic City, N. J., Oct. 10-14.

NORTH AMERICAN GASOLINE TAX CONFERENCE, Tulsa, Oct. 10-14.

NATIONAL SAFETY CONGRESS, Chicago, Stevens Hotel, Oct. 10-14.

SOCIETY OF AUTOMOTIVE ENGINEERS, Aircraft Production meeting, Los Angeles, Ambassador Hotel, Oct. 13-15.

NATIONAL STRIPPER WELL ASSOCIATION, Tulsa, Oct. 18.

INDEPENDENT PETROLEUM ASSOCIATION, Tulsa, Oct. 19-21.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Minerals and Petroleum Divisions, Los Angeles, Oct. 20-21.

NATIONAL ASSOCIATION OF CREDIT MEN, Petroleum Refiners Division, Indianapolis, Ind., Oct. 24-26.

NATIONAL PETROLEUM ASSOCIATION, Department of Fire and Accident Prevention, Olean, N. Y., Oct. 26.

MID-CONTINENT OIL & GAS ASSOCIATION, Texas Division, San Antonio, Oct. 27-29.

November

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, regional meeting, Tucson, Ariz., Nov. 1-5.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, Pacific Section, Los Angeles, Nov. 3-4.

AMERICAN PETROLEUM INSTITUTE, annual meeting, Chicago, Stevens Hotel, Nov. 14-18.

December

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, New York, Dec. 5-9.

Practical Problems in Oil Exploration

By GERALD H. WESTBY
Seismograph Service Corporation

GERALD H. WESTBY

Two problems, Mr. Westby says, confront oil companies. FIRST: Discovery of oil that can be drilled for and produced at low cost on which money can be made immediately to "pay the way." SECOND: Exploration for future reserves by occasionally drilling a deep test on a large block, even in areas where proration may preclude the possibility of profits for several years.

You have heard for so long the cry of "Wolf, wolf," in regard to our diminishing oil reserves that my feeble yelp will pass unnoticed. I have, however, the advantage of being in contact with the exploration departments of many oil companies and am aware of the problem before them, of their methods of attack, and of their feelings for the future. As one executive of a major oil company told me the other day, "We have two problems confronting our exploration department in finding oil. One is to maintain our reserve and the other is to find oil on which we can make money immediately to pay our way." The finding of oil to "pay the way" at the present time means that first of all such oil will find a ready market, that there will be little or no proration, and that the cost of drilling or producing will be at a minimum. No oil company can indefinitely carry out a program of drilling deep, expensive wells, tying up enormous sums of money, and being able to produce only a small amount of the oil available. In fact, with the present price of oil it is difficult to justify the drilling of deep wells in many areas.

The decline in finding rate may be slightly alleviated by improvement in producing technique, but looking at it from an oil company's standpoint the problem appears to be: First, concentrate on the discovery of oil that can be drilled for and produced at low cost at present. Usually such type drilling and such production does not add a great amount of reserve. Secondly, in order to build up and know that a future reserve is available, occasionally drill a deep test on a large block even in an area where proration may eliminate the possibility of securing any profit for many years from the venture. To my mind these two steps are necessary and inevitable.

Illinois An Example

The present play in Illinois is to a large extent not an effort on the part of oil companies to build up reserves, since the past history of Illinois indicates that the reserves available are probably not great. When oil companies become enthusiastic over the possibility of finding areas with small wells at shallow depth which may produce 4,000 bbls. to the acre and follow one another into the area until a boom is on such as has not been seen for many years, it is indicative that the oil companies want to make some pocket money with which to carry on present operations. The market is available, the oil is of good grade, and the wells may be drilled at no great expense.

Were it not for the development of geophysical methods, there would already be an enormous lag in the discovery of future reserves and possibly such shortage would have been felt in production.

We can expect without doubt a great increase in foreign reserves commencing within the next year as soon as the results of the present exploration campaign begin to be felt. The seismograph is locating new structures in Argentina with several crews busily at work under the direction of American geologists. In Venezuela exploration continues unabated in new territory and the results should be apparent before long. In Trinidad a very intense survey is being made with six reflection seismic parties at work in an area of not more than 1,000 square miles. Recent concessions granted in Egypt to American and English oil companies are being explored. Britsh India will be prospected by the seismograph and other geological and geophysical means. The Dutch East Indies is being combed by very detailed seismic methods. American, English, and Dutch oil companies are leading the way in the world scramble for petroleum reserves. Recently American companies have turned to Alaska for an area to prospect.

Whether or not an area may be profitably explored in the future will depend entirely on the price for oil which again may depend on the effect of a flood of foreign oil being made available. Occasionally a company able to bear the expense will carry out exploration including the drilling of a well in the hope of uncovering a large reserve. Despite the fact that our methods for exploration have much greater resolving power than in the past and are far more efficient than a few years ago, the results of continued exploration are again bearing the mark of the law of diminishing returns. While the exploration methods for oil have become more expert, the targets to shoot at are now mostly producing oil fields. For the time being until we can get a higher price for oil, I would suggest the concentration of exploration with our best known and most efficient method, the seismograph, in areas where drilling costs are low, acre yields high, and oil may be produced in quantity to compete with the present Illinois situation.

While no new method is at hand, our seismic methods are now adapted to the prospecting for fields with small closure which require extremely accurate results to locate. The prospects are not for the discovery of any large oil field, but for the discovery of small, highly profitable pools which from an operator's standpoint should be much more attractive than the deep well fields where a great amount of capital may be tied up.

The search for large oil fields in the early days of seismic exploration led to the surveying around sections. Recent more careful work has shown the existence of oil fields in the interior of sections entirely untouched or unnoticed in the first type of shooting. Certain areas of North Texas, southern Kansas, and the old Seminole area are still very likely spots for accurate detailed investigation by seismograph which will be rewarded by the discovery of prolific small oil pools obtainable at a reasonable cost. There are many areas yet in the United States where geophysical exploration methods have not yet been intensively applied. These areas may be less attractive because of position in relation to market and the possible depth of the producing horizons.

Shore Line Conditions

There is one factor which I have left unmentioned in the possible search for future oil reserves because we have no method of attack to cope with it at the present time. That is the discovery of shore line or East Texas conditions or lenticular sand condition. At the present time drilling alone can reveal the presence or absence of such oil fields. This is a definite field for small hole drilling which is bound to become an important method of exploration guided largely by geological and partly by geophysical methods.

While it seems very necessary at the present time for all oil companies to maintain or increase their oil reserves, it is probable that due to the present condition of the oil market only extremely well-financed companies would be able to carry out a program of accumulating reserves. Wherever one turns in the United States in the search for large undeveloped reserves one is met with difficulties which prohibit the immediate development or even exploration of such areas. In short, most of the fields that can be found by the existing methods have been discovered. Many fields remain to be discovered but the cost of their discovery, both in the actual field application methods and in the drilling of the wells, will be considerably in excess of an amount that would permit profitable operation today. We are in a stage in which the oil industry to exist must develop and produce day to day the oil fields which are immediately profitable and leave until some time in the future when the pinch of diminished reserves affects the price structure the intense and costly effort which will be necessary to add substantially to the nation's oil reserve.

Huntington Beach Enters Suit to Block State Tideland Leasing

LOS ANGELES, Calif. — The city of Huntington Beach is preparing to open a court battle to prevent the state from leasing tidelands for oil drilling, Mayor McCallen said. The city will seek a restraining order to prevent the state from proceeding with its plans to lease the tideland area to the highest bidder, he said.

The city will base its suit upon the claim that drilling from the inland side of the highway into the tidelands would be an encroachment upon city property. Furthermore, Huntington Beach is cancelling all agreements pertaining to the tidelands made by previous city councils, as the first step in the campaign to obtain clear title to the tideland area.

According to bids called by the state, drilling into the tideland pool must be from an upland location, with wells to be whipstocked, or slanted, into the pool. The 800-acre strip has been divided into parcels and will be drilled by bidders offering the highest percentage of oil to the state.

The State Lands Commission is calling for bids, receivable up to noon September 1, on five separate parcels of tidelands northwest of Huntington Beach for oil and gas development. The area embraces approximately 800 acres.

The minimum royalty that will be considered, the board says, will be 12½ per cent, and bids must be submitted on the basis of a mathematical formula which may involve a maximum royalty as high as 60 per cent of all oil produced. The plan was worked out on a basis which takes into consideration natural decline of the well.

Under such a system the royalty exacts a penalty from wells of large capacity and takes less from the wells which prove to be small producers.

First Application for Authority To Export Gas to Mexico

WASHINGTON, D. C. — The first application for authority to export natural gas to a foreign country, under the provisions of the Natural Gas Act, has been received by the Federal Power Commission from United Gas Pipe Line Co., a Delaware corporation with offices at Houston, Tex., Acting Chairman Claude L. Draper announced.

The natural gas for the exportation of which authorization is sought is produced principally in the Lopez and South Martinez fields in Zapata County, Texas; is purchased by the applicant under contracts with the producers, and is transported through the United company pipe line to a point on the international boundary between the United States and Mexico near Roma, Starr County, Texas, where it is sold and delivered under contract to Compania Mexicana de Gas, S. A., a Mexican corporation, which transports the gas to Monterrey, Mexico, where it is sold and delivered to customers.

Natural gas has been continuously delivered since December 4, 1929, to the Mexican company as buyer, the application states, under a contract originally entered into with South Texas Gas Co. as seller, under date of December 31, 1929, as amended, the service being continued by its successors.

Unless authorization is granted, the application states, the United company will be unable to fulfill its contractual obligations after December 21, 1938, the effective date when exportation is prohibited without the authorization of the commission; the applicant's investment in the pipe line extending from the fields named to a point near Roma will be lost, as no other substantial deliveries of gas are made from this line, and the ability of Compania Mexicana de Gas, S. A. to serve its customers in the Monterrey area will be seriously impaired as it will be entirely dependent upon Mexican fields for its source of supply, which at the present time is insufficient to meet its requirements. The natural gas proposed to be exported is not needed to supply the markets in Texas which are accessible to it, the applicant states.

Motor Truck Sole Contact For 48,000 Communities

There are still 48,492 communities in the United States that depend solely on motor truck service for contact with the rest of the nation, says Clayton Farris, president of the Trucktor Corp., one of 53 manufacturers who have contracted for space in the fifth annual National Motor Truck Show at New York, November 11-17.

The 48,000-odd communities that must utilize trucking services for outside contact including shipping and receiving of all foodstuffs, are inhabited by 7,844,509 people.

Obituaries

FELIX C. DUNN, East Texas drilling contractor and operator, died at Tyler last week.

WILLIAM C. FRANCIS, 61, Tulsa oil operator, died August 20. After moving to Tulsa from Jamestown, Ohio, he was associated with Mid-State Oil Co. and the D. K. Smith estate for several years.

EDWARD R. BOYLE, 58, president of the Derrick Publishing Co., which publishes the Oil City Derrick, and a director of The Oil and Gas Journal, died late Saturday,

E. R. BOYLE

August 20, in Oil City, Pa., after a two weeks' illness. He was the youngest son of the late P. C. Boyle, founder of the Oil City Derrick and of The Oil and Gas Journal.

A native of Titusville, Pa., Mr. Boyle spent most of his life in Oil City. He attended Georgetown University at Washington, D. C., and the University of Notre Dame at South Bend, Ind. He joined the staff of the Oil City Derrick in his early manhood, devoting his time to the business department of the newspaper. He had been president of the Derrick Publishing Co. for many years.

Mrs. Boyle, who before her marriage was Miss Margaret E. Dwyer of Oil City, died September 13, 1933.

Surviving are one daughter, Mary Margaret; one son, Edward P. Boyle, and a grandson, P. C. Boyle, all of Oil City; and a sister, Mrs. Frank T. Lauinger, of Tulsa.

Funeral services were held in St. Joseph's Church in Oil City on Tuesday morning and burial was conducted in Oil City.

HERMAN L. HENSEL, SR., 55, Tulsa, of Sinclair Prairie Oil Co., died suddenly August 17. He joined the company in 1916 and had worked in the production department, handling matters pertaining to proration.

FRANK M. DRANE, president of Drane Tank Co. for many years, and widely known throughout the Mid-Continent oil fields as "Tanky" Drane, died at his home in Fort Worth, Tex., early Sunday, August 21, of heart disease. He was born at Blackburn, Mo., January 29, 1876, and became active in the Mid-Continent in 1912. He has resided at Fort Worth since 1920. He was actively engaged with his company until illness forced his retirement a few months ago.

Mississippi to Lend Money to Extinguish Gas Well

JACKSON Miss.—The state oil and gas board has accepted a bid of $8,895 by the Patton Corp., Houston, Tex., to extinguish a six-day-old gas well fire in the Hinds-Rankin field near Jackson. H. L. Patton, president, said the Patton Co. would send twelve fire-fighters immediately to snuff out the fire without explosives.

Although no property or life was threatened, the pressure of the fire's pull drew salt water into the well. A salt water threat was imminent for the more than 50 wells in the producing area. H. M. Morse, state gas and oil supervisor, said the salt water might extinguish the flame but would ruin the well, which is Rankenside Development Co. No. 2.

By agreement of gas interests represented in the Hinds-Rankin field, the state is to advance $20,000 to put out the fire and the money will be paid back into the state treasury by a 5 per cent emergency sales tax on gas pulled from the various wells. It was estimated the appropriation could be repaid in a few months and the emergency tax would then be lifted.

Texas Gasoline Tax Increase Is Opposed by Roads Association

AUSTIN, Tex.—A suggestion that the state gasoline tax be increased 1 cent a gallon to provide funds for a more liberal pension system is "viewed with concern" by good roads supporters, according to Lowry Martin, president of the Texas Good Roads Association. He said it would throw an unjustified burden on the motorist and retard the highway program.

THE MARKETS*

CRUDE OIL: *East Texas prices reduced 15 cents to effect local adjustments. No definite indication that the action will spread to other areas. Lower allowables for September in prospect, with two-day shutdown weekly in Texas contemplated.*

REFINERY: *Gasoline soft in almost all areas. Other products easier in sympathy with gasoline. Mid-Continent lubricating oils slightly steadier as result of advances in Pennsylvania prices. Kerosene and light distillates feeling seasonal slackness in agricultural demand. Fuel oil increasingly weak on Pacific Coast.*

TANK-WAGON AND POSTED DEALER: *Kerosene prices revised upward at most points in Standard of Louisiana territory. Other changes inconsequential.*

FINANCIAL: *Oils dragged in a narrow range along with other issues in a slow market. Average of 30 representative stocks for week ending August 20: High, 30.46; low, 29.42; close, 30.04. Week ending August 13: High, 31.64; low, 29.32; close, 29.58.*

**Detailed information in market section.*

PENBERTHY PRODUCTS

Hydraulic Ejector

Steam Ejector

"Safeguard" Automatic Liquid Level Gage

Automatic Injector

SIMPLICITY

the outstanding feature

of the PENBERTHY REFLEX GAGE

(Licensed under Jerguson Patent)

"Navy Type" Liquid Level Gage

Gas Engine Lubricator

"All-Iron" Automatic Liquid Level Gage

● "It is the most simple gage to service that I have ever seen." This statement is typical of the remarks made throughout the oil fields since the Penberthy Reflex Gage was introduced.

Note particularly the U-Bolt type of construction that is the strongest and the simplest to service. To replace a glass, simply remove the nuts on the face of the gage . . . it is unnecessary to work between the gage and the boiler.

Snap Lever Oiler

The Penberthy Reflex Gage shown here is available in both Navy Bronze and Malleable Iron; it is recommended for working pressures to 350 lbs. at 450° F. Gage is furnished complete with Penberthy "Dripless" Drain Cock shown.

Other Penberthy Reflex Gages are made in any length desired for higher pressures and for various kinds of liquids. Any leading oil well supply distributor will be pleased to quote upon your particular requirements.

PENBERTHY PRODUCTS

Automatic Cellar Drainer (Water or Steam Operated)

PENBERTHY INJECTOR COMPANY *Manufacturers of* QUALITY PRODUCTS *Since 1886*
DETROIT, MICH. • *Canadian Plant, Windsor, Ont.*

Automatic Electric Sump Pump

Spring Compression Grease Cup

Plain Compression Grease Cup

Screw Plunger Grease Cup

CALIFORNIA SITUATION

(Continued from Page 29)

The industry appears to be confronted with the possibility, however, that Japanese purchases are being reduced and that an undetermined amount of Mexican crude will be taken in its place. Three tankers scheduled to load California crude in July were suddenly shifted to Tampico to load cargoes to Japan. This substitution has not yet become pronounced and it remains to be seen how important it will become. One fact is evident, however, tanker shipments from California to Japan have been slipping off gradually for several months. It is probable that exports of California petroleum to Japan will show a further substantial decline upon cessation of hostilities in China as Japanese exports of textiles, silk and other manufactured goods have shown a very substantial drop during the past year. This market must be built up again before conditions return to normal and require oil for manufacturing purposes.

Crude oil exports from California to Pacific foreign ports are running well above last year although a substantial drop was recorded during June, 1938. The high was reached in March when 3,066,852 bbls. was moved to Pacific foreign ports but liftings dropped to 2,266,729 bbls. during June. Fuel oil shipments to Pacific foreign ports, on the other hand, have been running substantially below last year, due primarily to the fact that the Japanese markets are taking crude oil in its place. Pacific foreign exports of diesel and gas oil have held fairly steady for several months but the total is running behind last year at the same time. Gasoline exports to the Pacific foreign trade are also running behind last year, the largest decline occurring during June, when the total dropped from 976,834 bbls. during May to 359,209 bbls. in June.

During the past several months, Russia has taken several cargoes of motor gasoline and aviation gasoline and, in reviewing the movement to Japan, this must be borne in mind as no such large movement to Russia took place last year.

Gasoline shipments to Atlantic foreign ports are running just about even with liftings at the same time last year but shipments of crude oil and other refined products are substantially lower.

It is probable the serious condition of Japanese finances is responsible for the sudden decline in shipments to that country as a number of tankers were delayed for from one to three weeks during June awaiting letters of credit.

Gasoline shipments to the Atlantic seaboard for domestic consumption have been averaging slightly less than last year but the total of all other products, consisting of crude oil, asphalt, lubricating oil, diesel and kerosene, is somewhat in excess of 1937. Contracts have been signed by western buyers for 1,250,000 bbls. of heavy California crude oil, principally crude oil from Santa Maria Valley and Gato Ridge fields, and up to the close of July a total of 404,467 bbls. had left California ports for the Atlantic seaboard for domestic consumption. This heavy asphalt crude presumably is to replace previous imports of Mexican crude oil.

The storage situation is causing California marketers no little anxiety because they appreciate that a serious crisis will arise when existing storage facilities are filled because it would be unwise to construct additional tanks to take care of a temporary condition. Stocks held in Pacific Coast territory have shown substantial accumulations for 12 consecutive months and will continue to pile up for the remainder of the year if production is allowed to continue at its present rate. The Central Committee of California Oil Producers after getting off to a bad start earlier this year, has been shaving off some of the allowable for several months and undoubtedly will reduce severely the allowable for September when it meets within a few days to set the amount.

Unless a general improvement takes place the allowable for the last three months of this year must be drastically cut. The only question at present appears to be the ability of operators to effect a curtailment drastic enough to prevent further substantial accumulations. Some further curtailment will undoubtedly be made in the Wilmington field when the going gets rough, if there appears any possibility of maintaining existing prices. It appears questionable, however, whether enough can be sliced off at Wilmington to remove the threat of price recessions.

As the picture stands at present there appears a strong possibility that the Central Committee will find it necessary to reduce the state's allowable production at least 75,000 bbls. per day during the winter in order to keep supply within striking distance of demand. At no time for several years has actual production closely approached the established allowable due to the refusal of several operators to conform with curtailment and there is no reason to expect a change.

If it were not for the consistent substantial accumulation in heavy crude and refinery residuum during the past year conditions on the Pacific Coast would not look so dark, but it places a heavy burden on marketers to have to store more than 20,000,000 bbls. of heavy stocks in less than a year. Marketers cannot continue to accumulate stocks indefinitely.

In the Rio Bravo field, operators have decided to reduce operations and instead of inaugurating a comprehensive drilling campaign they propose to take advantage of the 90-day drilling clause in their leases. At Wilmington operators are still attempting to secure approval of a plan that would reduce the maximum allowable from 500 bbls. per day to 400 bbls. Offsetting these attempts, we may anticipate completion of several additional wells in the East Coalinga field and this is bound to effect the production curve.

Developments during the next thirty days will probably throw considerable light on what the future holds, especially as far as offshore shipments are concerned, because if liftings decline the situation is going to get tough. Operators have nearly always been able in the past to buckle down in emergencies and may be able to steady the boat again. The outlook, however, is far from promising.

TOTAL FLUID STOCKS OF PETROLEUM HELD IN PACIFIC COAST TERRITORY

(Barrels)

	Heavy crude and fuel	Diesel and gas oil	Refinable crude	Natural gasoline	Gasoline	Naphtha distillates	All other stocks	Total all stocks
1936—								
December 31	65,487,937	8,958,060	33,770,339	1,828,636	12,384,540	1,387,940	7,526,284	131,343,736
1937—								
January 31	64,887,039	6,578,002	33,363,124	1,990,607	13,297,082	1,176,618	7,011,626	128,304,098
February 28	63,772,198	6,594,150	33,332,972	2,156,764	14,205,074	1,206,135	6,574,990	127,842,283
March 31	62,108,041	6,190,186	32,979,428	2,311,580	14,346,131	1,300,303	6,348,447	125,584,116
April 30	61,371,826	6,162,471	33,261,772	2,387,318	13,581,194	1,379,513	6,478,803	124,622,897
May 31	61,683,955	5,923,709	33,370,816	2,569,706	13,499,045	1,472,504	6,510,515	125,030,249
June 30	61,930,713	6,086,715	33,085,270	2,686,697	12,642,248	1,792,315	6,495,953	124,719,911
July 31	62,379,641	6,613,164	32,456,637	2,705,516	11,324,676	1,772,583	5,986,122	123,238,339
August 31	62,430,828	6,479,092	31,185,125	2,639,774	10,489,889	1,945,097	6,054,279	121,224,084
September 30	63,199,156	6,909,395	30,642,228	2,210,146	10,930,937	1,946,166	5,935,837	121,773,865
October 31	64,502,327	7,266,217	30,261,980	2,041,658	11,561,625	1,692,231	6,045,366	123,371,404
November 30	65,376,608	7,438,542	30,078,424	2,023,555	11,868,246	1,536,420	5,967,523	124,289,318
December 31	67,657,050	6,819,579	30,410,671	2,001,204	13,520,678	1,464,577	6,166,488	128,040,247
1938—								
January 1	*68,529,388	*8,648,990	*29,417,842	2,001,204	13,520,678	1,464,577	*4,457,568	128,040,247
January 31	71,758,162	8,865,191	29,393,330	2,121,425	14,443,190	1,333,075	4,769,380	132,683,753
February 28	74,428,663	9,103,824	31,104,054	2,390,076	15,134,960	1,587,174	4,778,383	138,527,134
March 31	76,907,466	9,241,322	31,556,951	2,549,761	15,452,752	1,666,410	4,994,964	142,369,626
April 30	79,873,516	9,361,306	31,376,515	2,689,376	14,729,793	1,663,567	5,275,209	144,969,282
May 31	81,652,079	9,297,687	31,529,797	2,913,534	13,895,109	1,628,985	5,617,159	146,534,350
June 30	82,684,670	9,669,433	33,156,394	3,190,274	12,975,245	1,496,083	5,797,773	148,969,872

*Revised.

TANKER SHIPMENTS FROM PACIFIC COAST TERRITORY

(In barrels of 42 U. S. gallons)

	Intercoastal		Pacific foreign					Atlantic foreign		
	Finished gasoline	All other products	Crude oil	Fuel oil	Diesel and gas oil	Finished gasoline	All other products	Finished gasoline	All other products	Total
1937—										
January	195,950	146,967	1,420,776	1,424,214	921,063	650,521	234,713	570,369	723,730	6,288,303
February	116,768	105,918	1,421,456	1,021,070	373,223	571,792	175,322	504,175	456,965	4,746,689
March	205,582	148,651	1,689,369	1,692,988	654,110	654,829	350,486	262,808	318,925	5,977,748
April	593,154	71,541	1,138,215	1,472,335	441,660	758,115	440,085	532,510	116,479	5,564,094
May	467,764	137,016	1,611,012	1,480,869	937,846	694,986	215,452	320,899	270,487	6,136,331
June	711,072	197,424	1,468,445	1,723,210	832,537	442,449	365,248	210,318	383,722	6,334,425
July	372,847	138,709	1,516,050	1,459,126	607,740	1,166,868	518,892	536,120	827,026	7,143,378
August	351,363	72,750	1,713,681	1,452,315	1,033,087	891,786	424,808	391,103	589,961	7,100,854
September	313,112	211,130	1,875,227	1,247,354	629,935	815,524	422,942	183,136	136,948	5,835,308
October	370,993	134,914	1,874,466	1,216,822	653,395	735,004	340,072	212,789	224,298	5,762,753
November	203,430	77,376	2,300,565	1,306,988	631,536	728,252	298,129	483,766	558,392	6,588,434
December	52,873	322,636	2,123,561	1,115,277	653,292	395,151	175,940	.....	227,078	5,065,808
Total year 1937	4,134,908	1,765,032	20,152,823	16,612,568	8,369,424	8,505,277	3,962,089	4,207,993	4,834,011	72,544,125
1938—										
January	265,344	313,240	2,879,152	651,758	471,356	530,883	170,338	300,675	165,621	5,748,367
February	81,020	.....	1,741,648	884,358	507,439	741,795	182,498	211,947	4,583	4,355,288
March	204,242	218,273	3,066,852	1,114,878	742,648	705,705	130,740	252,410	189,360	6,625,108
April	389,616	203,167	3,026,045	871,086	693,013	847,108	287,476	454,166	210,571	6,982,248
May	430,311	208,306	2,747,312	1,123,315	696,086	976,834	277,349	420,660	258,895	7,139,069
June	361,349	142,785	2,266,729	1,137,768	630,591	359,209	187,270	523,334	325,310	5,934,345
Total first half 1938	1,731,882	1,085,771	15,727,738	5,783,163	3,741,133	4,161,534	1,235,671	2,163,192	1,154,340	36,784,424

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It is still the privilege of the progressive manufacturer to build rope life into his product beyond official specifications.

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Natural Gas News

Hugoton Proration Order By Kansas Commission

WICHITA, Kans. — The Corporation Commission has issued an order bringing the Hugoton field under proration regulation. The order provides for allowables for wells based on 640-acre spacing; taking of pressure tests at six-month periods, and monthly hearings to determine market demand for gas. Installation of meters on wells is required.

The Hugoton field, composed of 1,380,000 acres, had 265 gas wells on July 1, of which 28 were without pipe line connections, the commission said. Production from the field up to July 1 was estimated by the commission at 135,000,000,000 feet.

Order Reducing Rates Affects 23 Oklahoma Communities

OKLAHOMA CITY, Okla.—An order reducing gas rates charged by Community Natural Gas Co. in 23 state cities and towns, estimated at $25,000 to $60,000 annually, was agreed upon unanimously by the Corporation Commission.

The new rate will apply on bills covering 30 days' consumption after September 20, in Achille, Caddo, Davidson, Davis, Durant, Frederick, Hastings, Hugo, Loco, Wynnewood, Marietta, Manitou, Maysville, Mountain Park, Paoli, Pauls Valley, Purcell, Ryan, Snyder, Sulphur, Tipton, Waurika, and Wayne.

The new rate is 20 cents per 100 feet for the first 600 feet, and for additional gas ranging from 55 cents to 65 cents per 1,000 feet, depending on the average annual consumption per consumer.

Gas Utility Revenues Are Less in First Six Months

NEW YORK.—Domestic customers served by manufactured and natural gas utilities totaled 15,898,100 on June 30, an increase of 265,900 over a year ago. Revenues aggregated $421,092,700 for the first six months, a decrease of 2.4 per cent. Revenues from industrial and commercial users decreased 9.5 per cent, while domestic revenues gained 1 per cent.

Manufactured gas industry revenues showed an increase of 2 per cent. Revenues from industrial and commercial users of manufactured gas declined 3.1 per cent, but revenues from domestic uses, were 2 per cent more.

Revenues of the natural gas industry for the first six months amounted to $233,475,000, a loss of 5.7 per cent. Revenues from industrial uses decreased 15.8 per cent, while domestic revenues declined 1.4 per cent.

The quantity of natural gas used in generating electric power during the six months ending June 30 amounted to 75,751,300,000 feet, an increase of 2.2 per cent from the corresponding period of 1937.

Hearing on Murray County Gas Pool Well Spacing

Application for 40-acre well spacing in a new Murray County gas pool will be heard by the Oklahoma Corporation Commission September 6.

E. D. Shell, of Ardmore, and T. E. Revels, of Wynnewood, asked the commission to issue a spacing order and drilling regulations covering Sections 4, 5, 6, 7, 8, 9, 16, 17, and 18, in Township 1n, Range 2e, near Davis.

Mr. Shell drilled the discovery well, No. 1 Mat Wolf, in SE SW Section 8-1n-2e. The well showed for 33,000,000 feet of dry gas daily through 6⅝-inch pipe. Total depth was 2,522 feet; rock pressure 950 pounds.

Pennsylvania Gas Inquiry May Require Two Years

HARRISBURG, Pa.—The Public Utility Commission's investigation of the natural gas industry in western Pennsylvania will not be completed for at least two years, counsel for the regulatory body predicted.

The commission has ordered an investigation into the reasonableness of the charge levied by 200 gas companies.

"This is a gigantic task," Attorney Edward Knuff, chief counsel for the commission, explained. "Every company must be heard individually. That's the only way the investigation can be conducted. I don't see how we can possibly complete the job before two years time."

He pointed out that a complete inventory of all the property owned by the various gas companies under survey had to be assembled and submitted to the commission. "That alone takes months," he added.

Explaining the purpose of the inquiry, Knuff said: "Such investigations were authorized under Section 3 of the new regulatory law passed by the 1937 legislature. It permits the commission to impose temporary rates on companies that are making more than a 6 per cent profit on their investment.

"We decide the question of whether temporary rates should be imposed by determining what revenue they should make and allowing for expenses. If the total exceeds 6 per cent, the commission is allowed to fix a rate which it deems reasonable."

Under the new utility law, the burden of proof in such cases is placed on the utility. Of the 200 firms named only 93 have had hearings, the commission reported.

September Gas Nominations Before Railroad Commission

AUSTIN, Tex.—Gas-purchase nominations for September presented at the Railroad Commission hearing called for 2,063,023,000 feet daily, an increase of 61,410,000 feet daily over August. The Panhandle fields will supply 1,442,682,000 feet daily, of which 799,660,000 feet is sour gas and 643,022,000 feet is sweet gas. The East Panhandle field will furnish 130,800,000 feet and the West Panhandle field 512,222,000 feet of sweet gas daily. From outside the Panhandle will come 620,341,000 feet of gas, nearly all sweet.

Pipe Line Activity

Tractor lining up 40-foot joints of 12-inch pipe

Pipe Line to the Shreveport Discovery Well Completed

SHREVEPORT, La.—The line from the R. E. Allison discovery well on the northwest edge of the Shreveport city limits to the Atlas refinery at Jewella, has been completed by Atlas Pipe Line Co. Part of the line will be 6-inch and part 4-inch. The discovery well had been shut in since July 15 due to lack of buyer.

Work Started on Short East Texas Line

FORT WORTH, Tex.—Work has been started on the construction of a 15½-mile line from the old McMurrey Petroleum Corp. plant at Arp to the company's plant at Tyler which reopened recently. The 5½-inch line is to be all welded and is expected to require about six weeks to be laid. The line from McMurrey's plant at Tyler to the East Texas field was bought by Bell General Pipe Line Co. several months ago.

Hagy, Harrington & Marsh Plan Hugoton-Mesaba Line

AMARILLO, Tex.—Hagy, Harrington & Marsh, independent gas operators here, have announced plans to build a gas pipe line from the Hugoton, Kansas, gas field across Nebraska and South Dakota to the iron mining Mesaba range of northeastern Minnesota.

The pipe line, company representatives said, would make fuel available to all towns near the line in the four states and serve the iron mining industry of the Mesaba range.

Construction of the line would necessitate drilling of at least 100 gas wells in the Hugoton and Oklahoma Panhandle fields.

Preliminary work and surveys on the project have been completed and construction awaits final action on a $20,000,000 Reconstruction Finance Corporation loan. The project would cost $25,000,000.

A meeting of landowners and royalty owners in southwestern Kansas and Texas County, Oklahoma, has been called by the Guymon, Okla., Chamber of Commerce for discussion of a plan to build a natural gas pipe line from the Hugoton gas district. The major portion of the Hugoton field lies in Stevens, Grant, Morton, Finney, Haskell and Seward counties, Kansas, with the area proved to south of Guymon, in Texas County, Oklahoma.

Outlet Scheduled for Chapel Hill Well

FORT WORTH, Tex.—Plans for providing a pipe line outlet for the discovery well at Chapel Hill, Smith County, Texas, have progressed to the point where bids are being received for the laying of a 12-mile line from the well to H. L. Hunt's Walter Fair lease in the East Texas field. In the past two weeks the well, No. 1 Bradley, has been producing 175 bbls. of 62.4-gravity distillate daily from the lower Glen Rose. Sun Oil Co. started buying the distillate but recently Beacon Oil & Refining Co. has been buying the output and trucking it to its plant at Henderson.

Rocky Mountain Pipe Line Company Incorporated

The Rocky Mountain Pipe Line Co. has paid a filing fee of $1,315 for its state charter in Wyoming when articles of incorporation were filed recently with the secretary of state of Wyoming. The company lists its assets as $1,300,000.

Fitzsimmons Field Getting Its First Pipe Line Outlet

HOUSTON, Tex.—San Diego Pipe Co. and H. J. Porter have started construction on a 4-inch pipe line from the Fitzsimmons field in Duval County to a loading rack at the town at San Diego. This is the first pipe line outlet from the field.

Refinery Expansion

Union Oil Advances Men In Manufacturing Division

Norval F. Myers, formerly manager of Union Oil Co. Oleum refinery, has just been appointed manager of refineries with headquarters in Los Angeles, Calif., according to L. G. Metcalf, director of manufacturing for the company. Mr. Myers, a graduate of Beloit College and Princeton University, first became associated with Union Oil Co. in 1925, as a research chemist at Wilmington, Calif. He was later appointed supervisor in charge of the control and analytical laboratories, and in 1932 was transferred to the manufacturing department as superintendent of distillation. In November, 1935, he became assistant manager of the Oleum refinery, and one month after was elevated to the position of manager, in which capacity he has continued until his latest promotion. Mr. Myers' first official act in his new post was to appoint as his successor at Oleum, J. N. Holden, formerly superintendent of maintenance at the refinery.

NORVAL MYERS

Mr. Holden is a native of Nevada, but has spent most of his life in California. He graduated from the University of California in 1915, with a master's degree in mechanical and civil engineering. His first job after graduation was with the Redwood Manufacturing Co. of Pittsburgh, Calif., and he had reached the position of chief engineer with that company when he received an appointment as refinery engineer at Union Oil Co. Oleum refinery in 1920. He has officiated in this capacity through a period that has witnessed many changes in refinery equipment and technique, and his capable discharge of the important duties involved was responsible for his present assignment as manager of Oleum refinery.

J. N. HOLDEN

Bell to Handle Output of Ben Franklin Refinery

Albert Finston, president of the Bell Oil & Gas Co., in commenting upon his company's arrangement to sell the output of the reconditioned Ben Franklin Refining Co. plant at Ardmore, Okla., said:

"A new outlet for between 4,000 and 5,000 bbls. per day of southern Oklahoma crude oil will soon be provided by new refining and pipe line activity in that area. These fields, which produce low-gravity crude oil, are certainly badly in need of new markets, since most purchasers are effecting pipe line proration of one sort or another. Some of the companies are prorating to the extent where only 5 bbls. per well per day is being purchased.

"The Ben Franklin Refining Co., with headquarters in Tulsa and offices in Ardmore, was formed to acquire the Wirt Franklin refinery at Ardmore. This plant was recently purchased from the Wirt Franklin Co. by Dr. Sidney Born and W. C. Berry. The corporation is acquiring the refinery from these men.

"The new corporation has also acquired from the Healdton Pipe Line Co. its 75 miles of main 6-inch line which transects Carter County, Oklahoma, and taps practically every important field in the area, including Healdton, Hewitt, Tatums-Tussy, the Fox pool, and others. Negotiations are in progress to acquire gathering systems in several of these main pools.

"Construction work has already commenced on a new pipe still to process 5,000 bbls. per day of crude and necessary repairs are in progress. This plant will produce, in addition to gasoline, kerosene, burning oils, Diesel fuels and road oils, a complete line of asphalt.

"The output of the refinery has been purchased by the Bell Oil & Gas Co. of Tulsa, which requires the gasoline for its southern Oklahoma trade territory. Bell previously supplied a good portion of the territory, which will be served by this refinery, from its Grandfield, Okla., refinery and a considerable saving in freight will be effected by the location at Ardmore to serve eastern and southeastern Oklahoma."

Universal Oil Cuts in Half Royalty Charges to Refiners

Universal Oil Products Co. has just announced a reduction of 5 cents a barrel throughput for Dubbscracking, thus cutting the present rate of 10 cents a barrel squarely in half. Substantial reductions likewise are being made in the rates for reforming and viscosity-breaking operations.

The new rates, which take effect October 1, apply only to refiners, some 60 in number, using the process in the United States.

This is the second major royalty reduction that has been made by Universal and it brings the rate to one-third of what it was in the beginning. And while the curve of cracking royalty costs has been steadily dropping, yields of gasoline and antiknock value have been as steadily going up.

When the first commercial Dubbscracking unit was put in operation in 1919, the royalty was 15 cents a barrel and the yield of gasoline guaranteed by Universal was 21 per cent.

In 1934 when the 15-cent rate was cut one-third, gasoline yields had reached 50 per cent and more.

Today, many refiners are getting yields of 60 per cent or considerably better from their Dubbscracking operations—stabilized gasoline of suitable vapor pressure, high volatility and high octane rating.

Universal has also developed and is developing other important refining processes, including catalytic polymerization, iso-octane production, catalytic cracking, catalytic reforming, alkylation and production of aromatics, as well as U.O.P. gasoline inhibitors.

Natural Gasoline

Butane Being Used in Trucks Between Los Angeles and Detroit

DETROIT, Mich., Aug. 20.—Natural gasoline plant and refinery engineers are much interested in the report of the first exhaustive test given butane as an automobile fuel in the experimental run of a Ford truck from Los Angeles to Detroit.

The run, with the aim of finding out the possibilities of butane for widened application, was conducted by David E. Andersor., chief engineer of the Bohn Aluminum & Brass Corp., and Harold W. Smith, president of the American Liquid Gas Corp., of Los Angeles.

The two engineers reported at the conclusion of the trip that butane is the perfect motor fuel. They credit it with producing more power in any type of internal combustion engine, giving lower cost of operation and reduced cost of upkeep. They say there is no carbon formation or deposit from it, no oil dilution, no detonation shock. There also is said to be a large increase in pulling power, or torque, at lower engine speeds.

The entire trip was made at average speed of 40 to 50 miles an hour without the addition of water to the radiator. At the end it was found that 1½ quarts of water had been used. Only 3 quarts of oil were consumed.

"Carbon monoxide fumes and smelly exhaust are almost completely eliminated," the report said, "because perfectly carbureted mixtures and complete combustion are easy to obtain."

These facts were noted to indicate the absence of conditions resulting from the use of ordinary gasoline where, in approaching high altitude, carburetor settings have to be "leaned up," with spark advance and compression raised.

The report says further: "Liquid gas has been a waste product of the petroleum industry, not wanted in the natural gas supply for cities because of very high heating value, which is approximately 3,000 heat units per cubic foot. By expensive processes, liquid gas can be reformed into a liquid fuel, but in so doing it loses inherent advantages, besides increasing the cost. Therefore, in the quest for production of gasoline and petroleum products already having an established market, liquid gas has been blown into the air at the rate of billions of gallons a year."

An entirely new possibility in the use of the liquid gas was discovered on the trip. The report says:

"Inherent in the new fuel there is a large amount of available refrigeration which results when pressure on the liquid fuel is relieved and it again becomes a gas. This refrigeration may be used to cool the bottom of a refrigerated truck as the truck drives along. It may refrigerate or cool the cab of the truck. The interior of a car or bus may be cooled without added cost.

"In engine operation, when additional power is required, the refrigeration may be used to cool the ingoing fuel charge, allowing more cool gas to enter and to produce greater horsepower. The cool gas can also cool valves, pistons and cylinder walls."

The octane rating of butane runs between 110 and 115, as compared to around 70 in ordinary gasolines.

Camp Granted Permit to Build Gas Recycling Plant

AUSTIN, Tex.—Permit for the construction of a gas recycling plant in the Stratton field, Nueces County, Texas, was granted the Camp Production Co. by the Railroad Commission last week. The order granted the company permission to produce not in excess of 25 per cent of the daily open-flow potential of the gas wells located in the Stratton field. The gas is to be processed for its natural gasoline content and the residue returned to the producing horizon.

Continental Oil Plant in K.M.A. Field Starts

PONCA CITY, Okla., Aug. 22.—Continental Oil Co. has begun operation of the first of the three natural gasoline plants being erected in the K.M.A. field, Wichita Falls, Tex., and the other two plants will be completed within the next few days, it was announced here by J. G. Dyer, vice president in charge of drilling and production east of the Rocky Mountains.

Continental's three-plant system is designed to process casinghead gas from the entire producing area of the field, and includes provision for the return of gas to the various leases at pressures sufficiently great to permit repressuring, an important conservation measure.

All three plants will be equipped with 400-horsepower Clark angle-type compressor units, each capable of taking 2,000,000 cubic feet of gas from below-atmospheric pressure to pressures ranging from 250 pounds to 2,000 pounds per square inch. It is estimated that approximately 1,600 pounds will be required to return gas to the producing horizon in the K.M.A. field.

Under the present restricted flow in the K.M.A. field, production of the three plants is expected to total about 15,000 gallons of casinghead gasoline a day, but the system has a daily capacity of 40,000 gallons.

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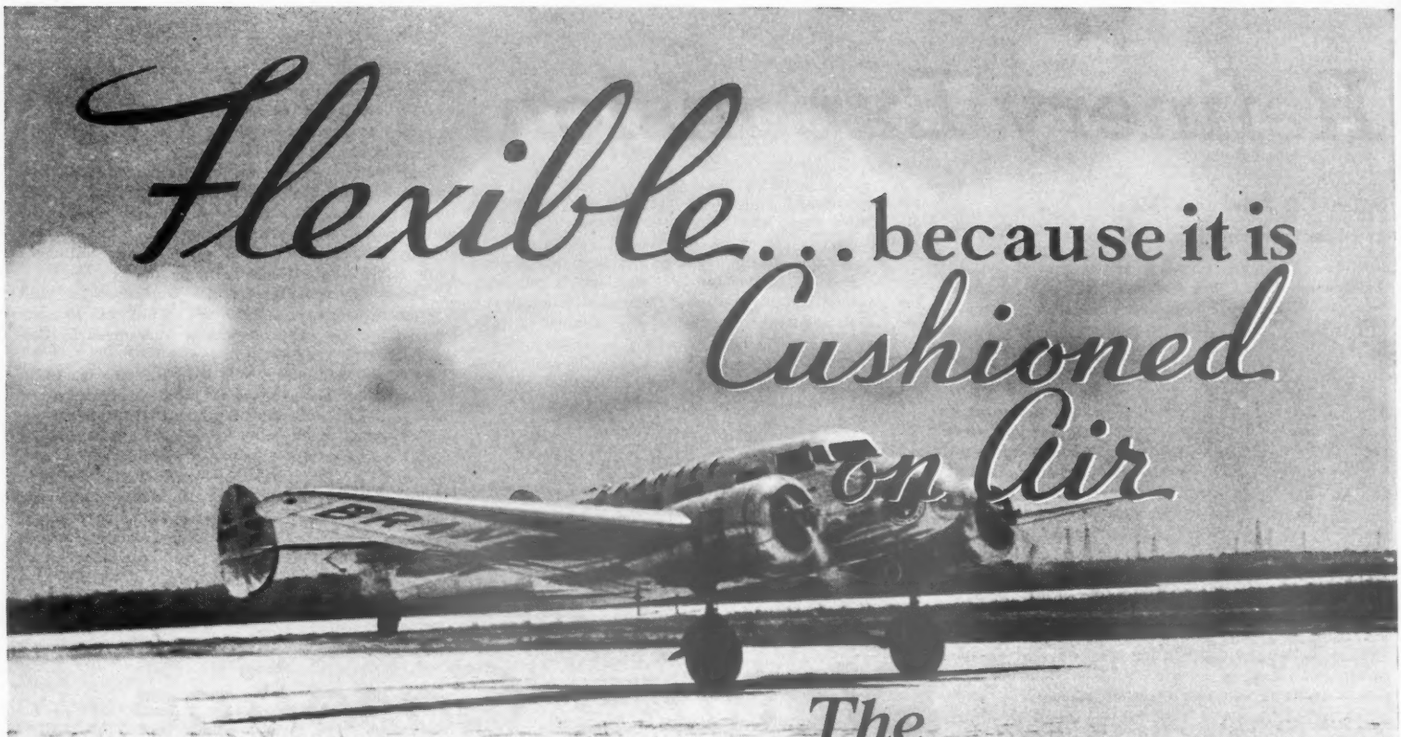

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REED ROLLER BIT COMPANY

P. O. DRAWER 2119, HOUSTON, TEXAS

Proration Rules and Practices Governing Arkansas Fields

The prorated areas of Arkansas are two of the three reservoirs of the Schuler pool of Union County, namely, Jones sand at 7,600-7,700 feet and Reynolds lime at 7,700-7,800 feet, the Buckner field of Columbia and Lafayette counties and the Rodessa extension of the south Miller County field, making a total of four reservoirs under proration at the present time.

The prorated areas are not divided into classes or districts. They are prorated as separate and distinct fields. All of the areas, with the exception of south Miller County, are prorated on basis of 50 per cent reservoir pressure and 50 per cent acreage. South Miller County is prorated on restriction formula of 50 per cent to the individual well and 50 per cent to acreage.

The Magnolia-Village field of Columbia County is on voluntary proration; that is, the purchasing companies take only a set amount from each well, this being 200 bbls. per day. The field will be prorated by the Arkansas Board of Conservation as soon as it contains five wells. At the present time it contains only two.

Producers Report Output

All operators in flush fields report their production to the Arkansas Board of Conservation upon a form known as A-1, which is identical to the EB form used by the Railroad Commission of Texas. The purchasing companies report their purchases on form known as A-2, which is identical to the pipe line report required by the Railroad Commission of Texas.

All new fields discovered after June, 1937, are prorated. So far no fields have been dropped from proration, nor does the board contemplate dropping any. Non-prorated fields in the state of Arkansas do not report production.

The monthly allocation is set each month after a state-wide hearing at which time all operators are heard. The allocation is based solely upon the behavior of the reservoir under the previous month's allocation and not upon market demand; that is, the objective is to obtain the greatest amount of oil and gas per pound decline in reservoir pressure as is practical.

The Bureau of Mines forecast of market demand is used only for statistical purposes and has no bearing upon allocation. It might be well to note, however, that the production from the fields is in close accord with the Bureau of Mines estimates.

Contacts with other conservation authorities are made, but not for the purpose of fixing crude oil production in Arkansas. In those states where accurate records of reservoir conditions of prorated fields are compiled, the data is used by the Arkansas Board of Conservation in compiling pressure production information for its own use.

The total state allocation is not governed by the allocation for any particular pool. Pools are not placed upon a competitive basis as yet, as they are in some other states. The allocation is divided between wells, with the exception of south Miller County, upon the basis of the acreage containing the well as it is related to the total acreage in the pool and the observed reservoir pressure of the well as it is related to the total weighted average reservoir pressure of the pool.

The operators are furnished monthly proration schedules setting out the total allocation for the pool, together with the daily allocation to the individual well within the pool.

The allowable schedule issued upon the first of the month reports the total allocation for the pool upon the first of the month. Any new well completed during the month has applied to it the factor governing the allocation for the individual well and is given this allowable. At the first of the next month these new wells are included on the proration schedule.

The Board of Conservation has ordered that no special allowables shall be granted under any circumstances to be cut back later.

Commencing August 1, 1938, the Board of Conservation has ordered that any overages or underages must be reconciled within the month for which the allowable was set.

Monthly reports are compiled and presented at each statewide oil and gas hearing. These reports cover crude oil production and flush field performance in the state. The reports are compiled from sworn records of the board for prorated fields and from reports of the U. S. Bureau of Mines and American Petroleum Institute for the unprorated fields.

The State of Arkansas sets an appropriation of approximately $11,000 yearly, which is repaid by the Board of Conservation in drilling permits, the charge for which is $50.

No Pipe Line Proration

The operators in the prorated fields make a voluntary contribution of one-quarter cent per barrel of oil produced to the Arkansas Board of Conservation to defray the cost of administering its orders and rules. The Board of Conservation is managing to operate upon the above stated revenue.

The Board of Conservation has in the field two graduate qualified petroleum engineers who obtain reservoir pressures and gas-oil ratios of all prorated fields each month. The reservoir pressures are obtained by a complete and well equipped reservoir pressure unit. The subsurface gauge used is the Standard of California type and the operating unit was constructed by the C. A. Mathey Machine Works and is mounted on a Chevrolet one-half ton truck.

Gas-oil ratios are obtained, with a few exceptions, by the use of orifice meters. All volumes of gas are corrected to 14.4 pounds plus 4 ounces, 60° F. and corrected for specific gravity by the balance method. In the unprorated fields, reservoir pressures and gas-oil ratios are obtained where practical by the operating companies.

The information gathered on the prorated fields is first used in what is known as the control chart for each field and the weighted average pressure and gas-oil ratio are plotted upon these charts against the average daily rate of oil production. This pressure gas-oil ratio production relationship governs the amount of production that can be allowed for each field. The reservoir pressure is then contoured upon a map of the field and the pressure for the individual well is read from this map and used for the purpose of setting the well's allowable.

Agents of the Arkansas Board of Conservation take reservoir pressures and gas-oil ratios in all prorated fields. Company employes assist the agents of the Board of Conservation in the physical determination of pressures. However, the actual determination is made by the agents of the board.

The Board of Conservation has an unwritten rule, but well understood, that no wildcat well can produce in excess of 200 bbls. of oil daily. As soon as there are five new wells within a pool, the Board of Conservation commences proration.

The determining factor in placing a field on proration in the state is protection of vested rights of owners of oil and gas in the field from undue, non-compensated drainage across property lines, to prevent rapid exhaustion of reservoir energy, to extend the flowing life as long as practical, to obtain the greatest ultimate recovery of oil and gas from the reservoir.

Operators Defray the Cost

Pipe line nominations are not considered in setting the allowable for the prorated fields of Arkansas yet. Pipe line proration has not yet made its appearance in the State of Arkansas. In fact, the demand as represented by bona fide nominations for the purchase of crude oil is in excess of the total allocation to flush fields within the state.

The board has determined that it cannot allocate more oil to the prorated fields than can be efficently produced without waste. There is a possibility, however, that the markets will decline to such an extent that it will be necessary to restrict the production from the prorated pools below that amount absolutely necessary to prevent damage to the reservoirs in order to assure ratable take and thereby protect vested rights.

Pipe line companies operating out of each prorated area are: Schuler field—Lion Oil Refining Co., Root Petroleum Co., Atlas Pipe Line Co. The Atlas Pipe Line Co. connects with the systems of the Pure Oil Co., Shell Petroleum Corp. and several small independents of Texas. Magnolia-Village—Standard Pipe Line Co. of Louisiana. Buckner field—Standard Pipe Line Co. of Louisiana. Rodessa extention of south Miller County—Standard Pipe Line Co., Magnolia Petroleum Co., Gulf Refining Co., East Texas Refining Co. and Southern Liberty Pipe Line Co.

The per well August allowables in each of the prorated fields was: Schuler—Jones sand, 62 wells, 300 bbls; Reynolds lime, 5 wells, 200 bbls. Magnolia-Village—2 wells, 200 bbls (voluntary). Buckner—5 wells, 200 bbls. South Miller County, 100 wells, 96 bbls.

The Board of Conservation has ruled that any well which produces with a ratio of gas to oil in excess of 50,000 cubic feet to the barrel is a gas well. Conversely, any well which produces less than 50,000 cubic feet of gas per barrel of oil is classed as an oil well. The state-wide rule concerning gas-oil ratios is 2,000 cubic feet to the barrel.

INTERNATIONAL NEWS

New Petroleum Law in Cuba May Stimulate Exploration

Serious attention is being given by oil companies to Cuba as a possible harbor of petroleum reserves. Cuba has received a limited amount of attention and exploration in past years, but lack of a definite petroleum policy and laws which provided inadequate protection for successful explorers handicapped companies and the government alike. Since passage of the recent petroleum bill early this year serious exploration work preparatory to the first deep drilling tests has gained headway.

Cuba's prospects of becoming an oil-producing nation have improved considerably with enactment of special petroleum legislation if for no reason other than that companies appear to be willing to investigate structural possibilities and incur the expense of geological preliminaries. Certain provisions of Cuba's petroleum law will undoubtedly have to be modified if the hoped-for development should materialize.

It is a matter of record, however, that the Royal Dutch-Shell group, Standard of New Jersey affiliates and subsidiaries and Atlantic Refining Co., to name the most active, have increased their interest and attention in Cuba since enactment of the petroleum law. The Royal Dutch-Shell group is doing extensive exploration work and has been active in acquiring prospective acreage. Atlantic first became intensively interested in Cuba back in 1930 and 1931 and has maintained passive or active interest since that time.

Not all elements in the quest for Cuban oil production are satisfied with the petroleum law as now constituted, but large companies appear to feel that a firm basis, heretofore lacking, has been established on which work can be initiated.

Petroleum in commercial quantities remains to be established in Cuba, but it is also true that drilling has not been prosecuted below 3,000 feet on the island. The new law requires that test wells be drilled to at least 4,000 feet.

Evidence that subsurface conditions in Cuba may be such as to trap hydrocarbons is found in the Motembo district, Santa Clara Province, where naphtha or distillate has been produced since Spanish colonial days. The naphtha discovery is said to have occurred in 1880. The Motembo district currently produces about 2,250,000 gallons of distillate annually which is sold directly to the consuming public at a price of approximately 22½ cents per gallon at the well. This production is expemt from the special public works tax, which raises the retail price of imported or refined gasoline to about 30 cents per gallon. The only crude oil produced in Cuba is at Bacuranao, near Havana, where about 50 wells 800 to 1,400 feet deep produced 225,000 gallons in the past year. The field was discovered in 1916. Despite extensive shallow drilling there has been no success in developing flush production in accordance with United States standards.

The new petroleum law reserves all mineral rights to the state and limits concessions to 30 years. Two types of concessions are granted: exploratory for a period of three years with payment of 15 cents per hectare annually and exploitation concessions, for 30 years with a tax of $5 per hectare yearly for the first 10 years, $10 for the second 10 years and $15 for the third 10 years.

Upon termination of the concession, wells, equipment, buildings, storage tanks and other physical assets become property of the government. In event the government does not wish to exploit the property, it shall be sold at public auction, the original owner having preferent right to bid on the property, but he must meet the best price offered. Operators consider this portion of the petroleum law extremely drastic pointing out that exploration and exploitation in a virgin territory might logically require nearly the maximum period lands may be held to recover a profit.

Owners of concessions in effect at the time the law was enacted have the choice of accepting the reduction of the period from the former 99 years to 30 years and pay 10 cents per hectare annually for the first 10 years, 20 cents during the next 10 and 40 cents during the third 10 years, or they may retain their present period of ownership and pay the high tax of $5, $10 and $15 per hectare fixed by exploitation concessions. A royalty of 10 per cent shall be paid to the state on petroleum and natural gas produced with 1 per cent minimum to the surface owner. Naphtha producers shall pay 5 per cent temporarily until production reaches 2,500,000 gallons annually, when 10 per cent will be collected. One-eighth of all concessions belong to the state as reserves. Holders of concessions of 6,000 or more 'pertenencias" (approximately 60,000 acres) are required to drill one well to each such block every five years. Small concessionaires are permitted to consolidate their claims in order to meet drilling requirements, but every holder of any size concession must drill within the period of five years.

Many independent operators who have been carrying on exploration work in the island and are now about ready to start drilling have leased from original concession holders to whom they have agreed to pay royalties averaging 10 per cent to 22 per cent on leases running 99 years, as provided by legislation formerly governing petroleum claims. Unless operators can pay the high scale of taxes set for exploitation concessions under the new law, these concessions are now reduced to 30 years with the added payment of a royalty of 10 per cent to the state and 1 per cent to the surface owner, who is rarely the owner of the mineral rights. Under the terms dictated by the state, exploitation expense becomes a real burden and may defeat purpose of the revised petroleum laws which were passed with the intent of encouraging development. The state also reserves the privilege of selecting its eighth of any concession without restraint advancing the possibility that concessions might be cut into inconvenient tracts. This potential problem looms particularly formidable in event the state's portion of a productive concession was in turn assigned to others for operation which would likely involve a competitive drilling campaign of almost town-lot proportions.

Criticism is leveled at the law in Cuba because of the provision for holding up to 6,000 "pertenencias" by the drilling of one well every five years. Critics assert that thus the balance of a tract might remain unexploited and in reserve for the full period of 30 years. By bidding in the tract it would be possible to extend the exploitation period for another 30 years. The objections, however, appear baseless in view of the fact that any individual or concern making a discovery would be taking unnecessary chances, especially if the strike should occur during the early part of the concession. There are no offset requirements in the law other than those potentially implied by the state's selective and reassignment power on an eighth of the land.

It is regarded as entirely possible that money formerly budgeted to exploitation and exploration in Mexico prior to the seizure of private company properties may be assigned in part to Cuba and other similarly located nations in the Central American zone.

Argentine Government Company Takes Over Itaca Properties

Confirmation has been received through Department of Commerce channels on the sale of "Itaca" Petroleum Co. to the Argentine Government oil company, Yacimentos Petroliferos Fiscales, for 2,500,000 pesos. The Y. P. F. acquired assets including the "Itaca" distributing organization and a refinery at Campana normally employing 600 workers with capacity of about 6,000 bbls. per day. The refinery acquired by Y. P. F. has been idle since last January. Details of the purchase by Y.P.F. did not state whether the refinery will be rehabilitated and resume operations or whether it will be held as auxiliary refining capacity.

Acquisition of "Itaca" is an indirect outgrowth of special considerations accorded the government-owned company and preferential treatment of it in Argentina petroleum affairs. "Itaca" was founded in 1918 by "Astra"' Petroleum Co. of Argentina and in 1917 Anglo-Persian Oil Co. (now Anglo-Iranian Oil Co.) acquired a 50 per cent interest. "Itaca" enjoyed a prosperous business from 1931 to 1934 when it began to sustain fairly heavy losses largely as the result of the surcharge on import duties applied in 1936 to petroleum originating in Peru and the rise in cost of crude. Other difficulties, chiefly those growing out of restrictive measures imposed by the government, finally forced "Itaca" to close its refinery at Campana in January, 1938.

A temporary truce has been arranged between private companies and the government concern over markets and prices, but it will terminate in 1940 unless extended before that time. What happened to "Itaca" is regarded as a barometer in the case of other private oil companies in Argentina unless some development halts the trend and sentiment for nationalization of the entire industry.

New Swedish Refinery to Be Built at Stockholm

Starting next January traders in petroleum in Sweden will be required to maintain minimum stocks on hand within the country amounting to 10 per cent of their 1938 turnover and after June 30, 1939, the stocks on hand must total no less than 20 per cent of this year's turnover.

The decree promulgated last month by the Swedish Government is modified to some extent from the recommendations of the committee which examined the question of minimum stock reserves. The committee recommended that stocks within the country be maintained by compulsion to the extent of 30 per cent of the preceding year's sales. For various practical reasons the present regulations do not call for so large an amount, but it is possible that this level may ultimately be reached by subsequent legislation.

The Swedish Government was given authority by law No. 367, dated June 10, 1938, to oblige traders (importers, distributors, refiners) in certain mineral oils to maintain on hand at all times such minimum stocks of these products as should later be fixed, the amount to be based on a proportion of their turnover during the preceding calendar year. The mineral oils specified in this law are the following: gasoline, crude oil, gas oil and fuel oil, unrefined kerosene and other refined fuel oils. The decree stipulating minimum stock requirements starting January 1, 1939, is the growth of the law No. 367.

The law further states, bearing out the contention of the committee that domestic refining should be expanded in the interests of preparedness, that importers may be obliged to purchase oils from domestic refiners in the quantity and at the prices which may be fixed by the government. In this connection the loan to Rederiaktiebolaget Nordstjernan at the last session of the Riksdag for the construction of a new refinery is of pertinence. The government approved a loan by which the private company may construct and operate a refinery of about 5,000 to 7,500 bbls. per day capacity near Stockholm. The Swedish company, (North Star Navigation Co.) is to receive a loan of approximately $1,750,000 for the refinery project. The company now operates the only complete petroleum refinery in Sweden at Stockholm on the site proposed for the new plant.

FIVE MONTHS' TRIP IN SOUTH AMERICAN FIELDS

By James H. Baker
Pittsburgh Equitable Meter Co. and Merco Nordstrom Valve Co.

ON looking back over a five months' trip through the oil fields and leading cities of the Caribbean area of South America the outstanding differences, from a traveling salesman's (peddler's) viewpoint, are the differences in mode of travel, living conditions, and the difference in working conditions due to lack of the usual car and hotel facilities.

In Colombia and Venezuela. if your time is of any value to you at all, flying is simply the only practical way to get around. This little trip I was on, with the help of Pan American Air Lines, took some five months. I estimate that traveling any other way about one year would be required. To sight an actual example, the flight from Bogota to Barranquilla, Colombia, lasts some two and one-half hours as contrasted with the best possible time by boat and train of 11 days and this 11 days can easily stretch into several weeks if the river is low and your boat gets hung up on sand bars. Considering the tremendous amount of oil and other development in progress in these countries at this time, if it were not for the well developed plane service this trip would be almost prohibitive in time and expense.

Regarding living conditions in general, I believe a traveling man who gets into the interior at all has an entirely different picture from that of an oil company representative. The new oil company employe on arrival in the country is usually met, assisted through the customs by a company man who can speak Spanish, and is then sent on his way to the particular camp where he will headquarter. At this camp he finds a very nice house, company store, club house and practically every other convenience awaiting him. The salesman on the other hand, except when in an actual oil field, must locate and stay at the hotel, eat the local food and worst of all, if he is to travel and live without extra discomfort, he either needs an interpreter or must pick up the language as rapidly as possible. On my arrival in Colombia I think I had at my command approximately 10 Spanish words and for the next two months a simple matter like sending out laundry became at once a problem of considerable magnitude. Spanish, of course, is still a deep mystery to me and a telephone in South America is something to avoid. It is surprising, however, how quickly you can pick up enough of the language to at least eat regularly and rent hotel rooms.

While in the oil companies' field camps I found that in every instance a salesman for a reputable company is really treated as a most important guest. One is, of course, handicapped as there are no hotels available and it is essential that your first business in a field be made that of securing yourself a place with the oil company where you can eat and sleep. These arrangements being made, your work progresses more or less in the usual manner except that you must depend in most cases on the oil company for transportation. The simple matter of getting in your own car and driving out to a particular well you wish to visit is not, in these places, as simple as all that. Here it is necessary to locate someone who is going out and coming back in the line of his regular work, and while this is nearly always possible, it does require considerably more time and soliciting favors than the same work would require in the States. In all of the camps, however, it is really surprising how accommodating the personnel are and considering all of the various salesmen that visit them over a year's time, they still seem very glad to see some stranger from the States.

Exciting Moment

Traveling in South America, without the benefit of speaking a language other than English, is not only a drawback, but at times the difficulties that it places you in, while humorous to recount, are pathetic at the moment. While in Colombia, I took a plane from Barrenquilla to Port Wilches, which is a small town on the Magdalena River. I had stopped at the port once before when the plane had let off another passenger and, consequently, had a hazy idea of what the place looked like. This particular time when I was planning to get off at Port Wilches, the plane stopped in a most unfamiliar spot. The co-pilot advised me that I was at Port Wilches. As it didn't look like Port Wilches to me, I, of course, argued with the pilots a bit and finally found out that we had actually landed in a lagoon some 3 or 4 miles from Port Wilches due to the fact that the water in the river was somewhat low and they had simply picked out this lagoon as a better landing place. Of course, landing in a lagoon, there was no pier for the plane; and as they preferred to stay out toward the center in the deeper water, the only way to get to shore was in a native canoe which simply consists of a large hollowed-out log. Riding in this canoe was bad enough as it seemed extra "tippy"; and as there were no seats in this craft, I simply had to crouch near the bottom and hope for the best.

The "welcoming committee" on shore, however, really "took the cake." There were some six or eight women busily engaged in washing (or ruining) clothes by the common laundry method of pounding them, and in addition some 10 or 12 children—all in various states of dress or undress. With the weather hot as the devil and two bags to take care of, not knowing which direction Port Wilches was in and not being able to speak Spanish enough to ask anybody—this was really a lovely spot. If it were not for the "kids" I would probably still be there having my other shirt washed, but they seemed to know more about the situation than I did and, shouldering my bags, they started off toward what I hoped was Port Wilches. Luck was with me that day, however, as after not too long a walk we caught up with a truck hauling gravel and were given a lift into town.

Another time when the Spanish language would have been of some help was during a lunch that I tried to procure for myself on the day when I was leaving Colombia to enter Venezuela by the way of the Catatumbo River and Lake Maracaibo. There not being anything that looked like a restaurant in the particular town I was in, and being very tired of warm beer, bread and cheese, I went into a little place which seemed to be the local hotel and, adding together a few of the Spanish words that I knew, told them I would like something to eat. The first few dishes they brought out were just too tough for me. Finally they brought out a dish with the usual rice and fried plantain and some little thin strips of what looked like fried meat. As this looked a little better, and by that time having had a cup of good Colombian coffee to fortify myself, I ate the lunch and honestly enjoyed it. The meat particularly tasted very good, and I tried to find out what it was, but my Spanish was not sufficient to translate the word

The author ready for a trip to the interior

"lagarto." Well, I have eaten a lot of things in my life, but I really felt rather funny later on when I found out that this meat I had enjoyed so much was the back of a little green lizard. It is a good thing I didn't know what it was, or I probably would never have found out what it tastes like.

Speaking of trying to learn enough of this language to "get by," it really would be a little more simple for a poor down-trodden peddler if the Spanish people would just decide how they preferred to speak it themselves. I soon found out that you have to be practically "ambidextrous" to keep up with the different ways these people have of asking for the same thing. Frankly, I began to think it was a "racket" especially constructed for my benefit to keep me from learning the language. For example, being very, very tired indeed of fried eggs, which was one of the few things I knew how to ask for, I decided one morning that poached eggs would taste very fine. So before leaving my room, I did a little research work with the dictionary and a phrase book and discovered that poached eggs were very easy to order, being "huevos escalfados." Fortified with this advance information, I thought I was in pretty good shape—until I asked for the eggs—and to make a long story short, while the waiter understood that I wanted eggs, the "escalfados" or "poached" part had him just as badly "stumped" as it did me—and I ate fried eggs.

During the day I inquired around a bit and found that these people called poached eggs "huevos pochados," and this being enough like English to be easily remembered, I thought I was all set—and I was until I got to Barranquilla where they understood neither "escalfados" nor "pochados," and with characteristic lack of imagination they did not seem able to understand from my "pochados" that I meant what they call in that locality "en poche."

Having now three ways to ask for "poached eggs," I felt at least that I would not starve to death in Venezuela; but much to my surprise, I found that they have still another way which, by the way is the most descriptive of them all, being "huevos fritos en agua," meaning literally "eggs fried in water." Well, four ways to ask for anything shouldn't be considered too bad, but in eastern Venezuela, believe it or not, even the "fried in water" description did me no good. Over in this section poached eggs seemed to be known only as "huevos a caballos," meaning, of all things, "eggs on horseback." I was about ready to throw the books away by then, when I ran into a Spanish instructor employed by one of the oil companies to teach their Americans the Spanish language. When I asked him about this somewhat confusing problem, I was very much pleased when he told me that the proper way to ask for poached eggs was the way I had asked in the first place; but he went ahead to assure me, although by that time I did not need assurance, that I certainly couldn't get poached eggs in Colombia or Venezuela that way.

Advantage of Air Travel

Traveling around these countries by air is quite a simple matter and apparently when you travel this way you are not subject to quite so much examination at the various customs. However, traveling by boat, train or otherwise and entering these countries consequently more or less "by the back door," you really get a liberal education in self-control and, for that matter, in the language that you are attempting to learn. There were times when it would certainly have been nice to have been met and to travel with someone familiar with the country, their language and customs. Actually, the education one gets forced upon him regarding how to travel and how to get along is more than worth the discomfort involved.

I remember one little trip in particular when I left Cucuta, Colombia, going to Maracaibo, Venezuela. This trip involved some three and one-half to four hours on the train from Cucuta to Encontrades. We will skip entirely any description of the train as those four hours I would just as soon forget. I do remember distinctly, however, for no reason that I can imagine, my baggage being examined (and I mean examined) three times during that one train ride. Just why one man's examination and seal was not sufficient, I never found out, but I long since learned that if I went along somewhat like the cattle walking down the street and asked no questions I would get a lot farther in less time.

Rig in eastern Venezuela

Arriving at Encontrades with a ticket in my pocket purchased the day before for passage on the river boat to Maracaibo, I felt as if the hard part of the trip was over. After selecting two boys from the twenty-some-odd that wanted to carry my baggage, we set out for the boat. Finding the boat was certainly no trouble, but getting aboard it with this baggage was something else. After being told about 10 times in Spanish, it finally "percolated" through my head that I couldn't get on the boat and neither could I leave my baggage on it until the baggage had been checked again and I had secured permission from the local police not only to leave the town of Encontrades, but also to have arrived in Encontrades. The next two hours I spent walking from one public official to another, with the two boys and my bags and all their friends, getting the necessary papers and stamps and depositing with the government the "trifling sum" of 160 good U.S. dollars for the privilege of traveling in their hot and sticky country. I know it will never be this much trouble again, but the first time—Oh Boy!

Well, I finally got on the boat, and it was a real relief when I got past the captain and found that I had all the necessary papers. I had an idea at that time of just how nice it would be to go to my cabin, take off my dirty, sticky clothes and relax. That would have been very nice—if only I had a cabin. I found that unfortunately by the time I got my papers fixed up, this being a "first-come-first-served" boat regardless of when you bought your ticket, the cabins were all filled with families, and apparently my lack of a family meant that I was going to sleep on an army cot on deck. I did get one pleasant surprise, however, a few moments later. All of this argument between the captain and myself had been going on in Spanish (at least that is what I think I was speaking) and I didn't think there was an American within 50 miles. Consequently, after I had come to the conclusion that arguing was not going to get me any place, I agreed with the captain that the army cot would be "very swell" indeed, and walked up towards the front of the boat remarking, I guess in a voice a little bit too loud, that this was certainly the —— —— —— boat that I had ever had occasion to be on. I was both pleased and surprised when a chap who had been leaning over the rail said, "That's just what I think, Buddy." At least from then on out I had someone I could "gripe" to in good old English.

Speaking of interesting parts of a trip of this nature, generally the part of your trip which seems the hardest at the moment leaves you with the most pleasant and interesting memories. Getting into the old Barco concession in Colombia was, while certainly not an easy trip, a mighty interesting one. The trip really begins by a canoe ride down the river. This ride takes you through waters that are quite dangerous as there are still a few "gators" in the neighborhood. The fact that the native "dug out" is equipped with a good old American outboard motor, firmly attached to the stern, makes this part of the trip all too short; and before you have exhausted your interest in the scenery, you have arrived at a mule station. Being expected, they have a mule ready for you, and they point out the trial to you, and for the next seven hours you and "Mr. Mule" keep very close company. I was very fortunate in being in the company of an American contractor and a big, tall 6-foot 4-inch Texas driller. There is a great deal of this travel which is through jungle on a very narrow and muddy trail; and as I had, of course, by this time heard all the stories about the Motilones Indians, the presence of this big Texan didn't make me feel bad at all, because, I am no "Indian fighter." Being, however, still a small boy along some lines, the trip through that jungle, the parrots, macaws and monkeys, to say nothing of my friend the mule, will be long remembered.

Another pleasant part of this trip was the food served in the oil company camp during the few days I was there. Remembering that every bit of this food must come in over the same mule trail, it was surprising to me that it turned out to be at least 100 per cent better than anything that I was able to secure in any hotel in two countries.

Aruba and Curacao

Visits to the two largest refineries in the world on the islands of Aruba and Curacao were highlights of my trip. Both of these refineries are not only tremendous plants but each one is also a city in itself with its own stores, homes, clubs, etc. Aside from material in actual use, one of the most surprising sights is the tremendous warehouse stocks these companies find it necessary to carry. Considering, of course, the absence of local stocks for sale and the delay in waiting for equipment from the States or Europe, this is easily explained. The company warehouse stocks are really representative of the main difference in sales work in these countries and the oil fields of the States. Here at home the center of every oil field is always a thriving community of large supply stores carrying for sale in the field every required item of the business. In these countries the companies must not only carry large warehouse stocks, but must anticipate almost every requirement of anything like an unusual nature three to four months.

Anyone reading the above might get the impression that my entire trip was one hardship after another, but actually the facts were anything but that. Practically, anywhere you go in these countries you actually are very well treated indeed, and after acquiring a slight knowledge of the customs and language, travel can be most pleasant. I cannot, of course, say that arriving in Trinidad where English is used was not a great relief.

ENGINEERING and OPERATING

In This Issue

INTERNAL-COMBUSTION ENGINES SOLVE TOUGH DRILLING PROBLEMS

By T. P. Sanders ..... *Page 52*

Surface conditions in a great number of California areas are unfavorable for the transportation of heavy drilling equipment and in those instances where water is scarce the use of internal combustion engines is usually justified. The use of large portable rigs driven by butane, gas and gasoline are discussed as well as use of diesels.

SAFETY IS PROVIDED BY BUILDING BRIDGE OVER ROTARY TABLE *Page 54*

Even though the driller and other operators may be familiar with the location of the rotary table on a derrick floor, considerably less danger to them results if a bridge is built over the table and in the path generally used by the operators.

MAINTENANCE OF MUD TO PREVENT OIL AND GAS WELL BLOWOUTS

By Ralph L. Hock ..... *Page 61*

As the drilling of the well progresses, changes naturally take place in the hydrostatic fluid head exerted by the mud. As the oil- and gas-producing stratum is approached unusual care should be taken to provide the proper weight of mud and consistency to handle a possible blowout. Tests should be run as the well progresses to make sure the mud is not gas cut, is of correct weight, has the proper viscosity, gel strength and stability to complete the hole most economically.

ACIDIZING GAS-PRODUCING WELLS IN WESTERN PENNSYLVANIA FIELDS

By J. P. O'Donnell ..... *Page 65*

Although acidizing oil wells has been practiced for many years the acidizing of old gas wells is comparatively new. The practice as it is followed in a number of areas in Western Pennsylvania is discussed.

IS IT PROFITABLE TO RECONDITION OLD STRIPPER WELLS?

By L. G. E. Bignell ..... *Page 68*

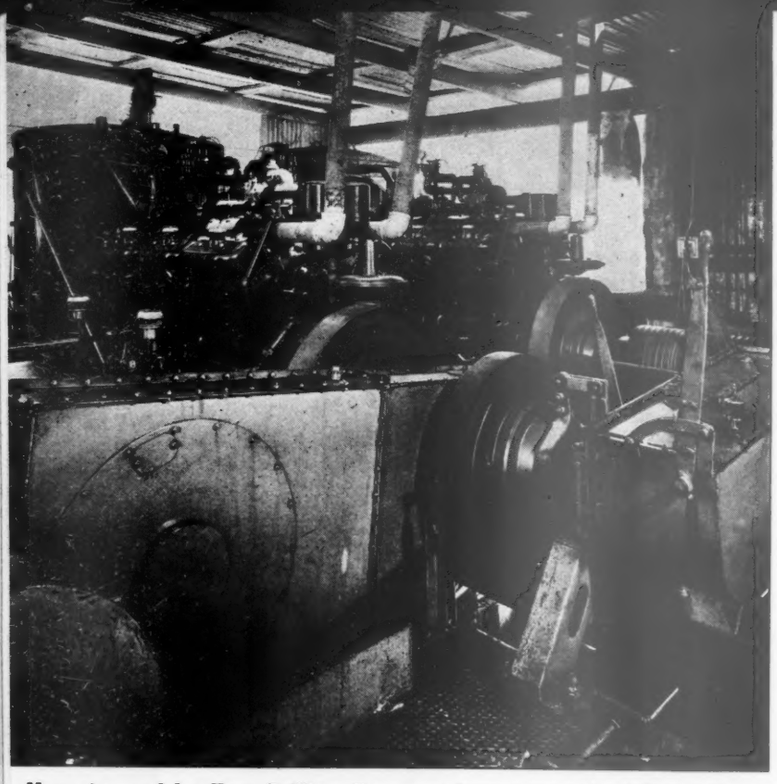
Many thousands of wells scattered over the United States produce between one-half and 3 barrels of oil daily. The justification for operating these wells is often questioned because of the relatively high operating costs involved. Water flooding, acidizing, repressuring and other means of increasing the production of such wells are discussed

OPERATING IDEAS ..... *Page 57*

METAL PROGRESS—*By W. L. Nelson* ..... *Page 58*

QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph. D.* ..... *Page 77*

PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 79*



New rig used by Kern Drilling Co. on a deep test north of Santa Maria, Calif. The 350-hp. V-12 engines use butane

Large Inte
Solves To

By T. P. SANDERS

The many improvements made in the use of steam during the past few years have served to fortify the strong position held by the steam drilling rig in the industry. However, rigs powered by internal-combustion engines have also improved and are at present finding favor under a variety of difficult operating conditions.

Butane, gasoline, natural gas, and diesel engines all offer the advantage of low fuel and water costs, and they lend themselves readily in the modern trend toward greater portability. In many locations these factors are of profound importance. Other locations are found, such as in crowded town-lot areas, where rigs powered by internal-combustion engines are advantageous because of the smaller space requirements.

In the California coastal district an important wildcat is being drilled at a location which illustrates the fact that internal-combustion engines are filling a need where other types of power would be impractical. Since the wildcat is to be a deep test, the rig is powered with the largest medium-speed engines ever used on a drilling rig. The test, known as No. 1 Sherer-Dicks, is being drilled for Hancock Oil Co. by Kern Drilling Co., and is located near Huasna, 30 miles north of Santa Maria.

After a surface geological survey, the Huasna wildcat was located at the apex of a structure which is represented topographically by a sharply pointed ridge. As a result the drilling site is not readily accessible for heavy equipment, and there is a minimum of space suitable for installation of rig parts. Also, there are no electric power or gas lines at hand. In such a position it is easily discerned that internal-combustion engines solve a difficult power problem.

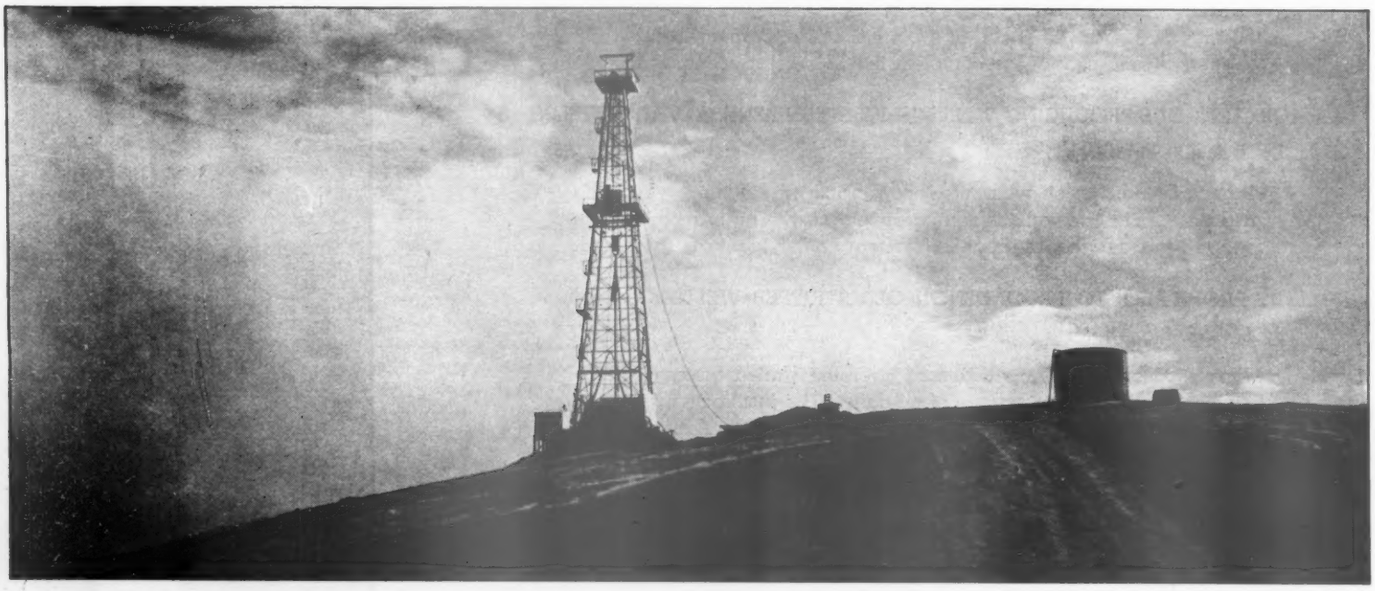
Use Portable Rig

A portable rig is employed at the Huasna test because of the adverse topographic conditions, but it is an exceptionally large installation. The Wilson hoisting equipment is designed for 13,000-foot drilling and is powered by two Le Roi V-12, 350-hp. engines which are operated on commercial butane. The rig is transported in five units, the heaviest of which is the drawworks weighing about 13 tons. Each engine weighs 9,000 pounds, but with the steel base and other accessories the power units each total eight tons. When assembled, all units are bolted rigidly to a heavy steel base which insures proper alignment.

The two engines drive the drawworks and slush pump through a chain transmission without the use of a reversible clutch. The 7¼ by 18-inch Wilson-Snyder slush pump is installed behind the engines and is V-belt driven. Both engines may be compounded on either the pump or the drawworks, or one engine may be used for each duty. The rotary table is chain driven from the drawworks. Twin Disc clutches are used.

V-type engines were installed because their design permits the use of many cylinders without greatly increasing the total weight or the length. The 6¾-inch pistons operate on 7-inch strokes under a governed speed of 900 r.p.m. At this rate each engine is capable of developing 350 horsepower when using gasoline. However, since butane is used, the power output is about 15 per cent greater when the engines are loaded. Also, it is possible to raise the engine speeds to 1,200 r.p.m., in which case the available power approaches 1,000 horsepower.

An important feature of modern drilling engines is their explosion-proof ignition systems which have made their use permissible where fire hazards exist. Spark plugs are set in long



This test, drilled by Kern Drilling Co. for Superior Oil Co., was located 40 miles north of Coalinga, Calif., and 15 miles from available water. Diesel engines were selected for the task

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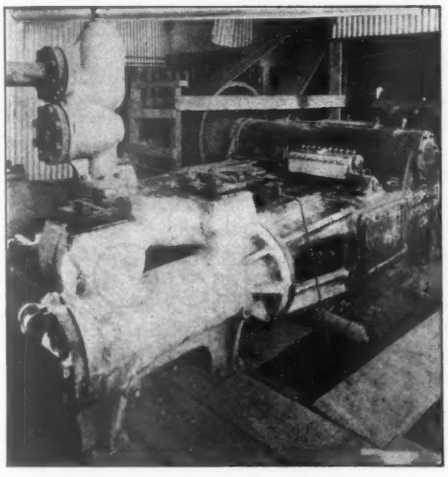
ugh Drilling Problem



Slush pump driven by V-belts from a portable diesel rig at a California deep test

brass sleeves from which a spark cannot be communicated to explosive mixtures about the rig. Each V-12 engine is equipped with two magnetos which are gear-operated from the water-pump shafts. Like the spark plugs, these are encased to prevent explosions. Instead of using electric motors and batteries for starting the engine, small four-cylinder gasoline engines are employed which are also explosion proof. These drive the starting Bendix gear by means of V-belts.

Dual ignition is used. Each of the two magnetos used on each engine fires one side of each cylinder, and the two ignition systems are entirely independent of one another. Under this plan a failure in either ignition system does not necessitate an engine shutdown. It has been demonstrated with this type of engine that greater efficiency results when dual ignition is used.

Recent years have witnessed a decided decrease in engine wear because of the use of filters for oil and air. Oil filters are an integral part of the V-12 engines. The air entering the carburetors passes through Vortex filters. The tops of the cylinders and the valve stems are lubricated by an up-cylinder oiler which injects heat-resisting oil into the cylinder heads, thus reducing engine wear.

An unusual feature of the large butane engines is their use of water jackets around the exhaust manifolds. This practice prevents the manifold from conducting heat back into the side of the engine head, and it also removes a possible fire hazard. Minor burns which are sometimes suffered by members of the drilling crews from hot manifolds and piping are effectively avoided.

Much of the heat gained by the jacket water in cooling the exhaust manifolds is used to advantage in preheating the butane charged to the engines. The butane is carried as a liquid in the storage tanks under an average vapor pressure of 50 pounds. This pressure is released in two stages. Due to the rapid expansion, heat is necessary to prevent freezing of included water vapor. The butane passes through coils in several small heat exchangers while the jacket water circulates around the coils. The preheated butane enters the Ensign carburetors at 4 ounces pressure, and is mixed with filtered air.

The cost of operating an internal-combustion rig on butane is usually greater than when natural gas is used, but the advantages are greater power and the elimination of gas-line installation costs. The rig near Huasna requires 600 to 650 gallons of butane per day, thus resulting in a daily fuel cost of about $35.

Richfield Test

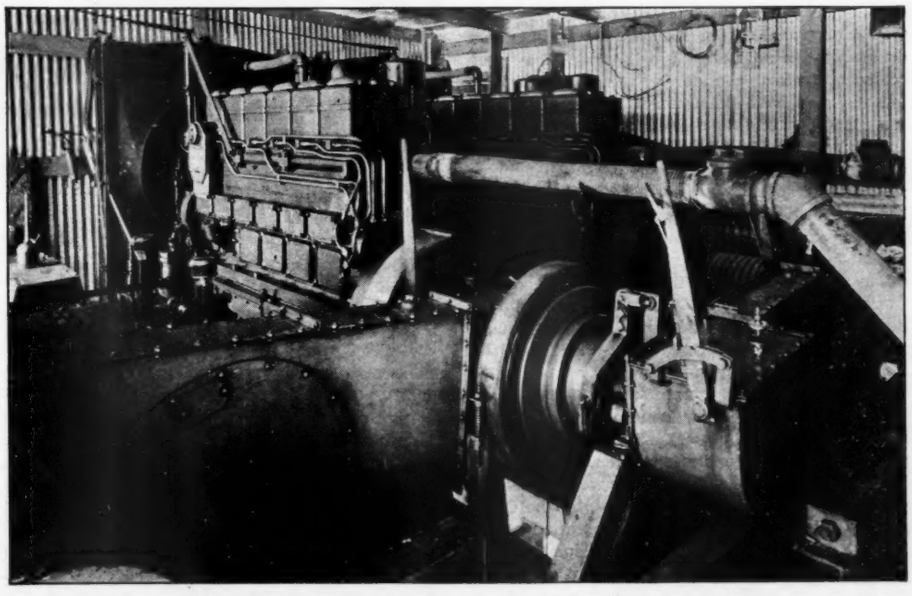
Richfield Oil Corp. is drilling a deep test at Wheeler Ridge with a similar Wilson rig powered by two 6-cylinder 350-hp. natural gas engines. These have 8½-inch pistons operating on 9-inch strokes under a governed speed of 900 r.p.m. Gas consumption averages 35,000 cubic feet per day, resulting in a daily fuel cost of only $4, disregarding gas-line installation costs.

The Richfield test at Wheeler Ridge is over 6,000 feet deep and may reach a depth of 9,000 or 10,000 feet. For this reason equipment performance is being watched, as internal-combustion engines have never been used for drilling deeper than 8,000 feet in California. Recently Sunset Oil Co. successfully used equipment of this type in drilling a 7,900-foot El Segundo well.

Difference Due to Fields

In the Mid-Continent fields internal-combustion engines are often used at locations where water, gas, and electricity are readily available, but in California they are usually confined to areas where fuel, water, or transportation problems are severe. For example, the Kern Drilling Co. recently drilled a wildcat for Superior Oil Co. on a hill in desolate territory 40 miles north of Coalinga, Calif. The use of a Wilson rig powered by two 200-hp. Cummings diesel engines saved the laying of 15 miles of water line. Water for mixing mud and for engine jackets was hauled in by truck, thus saving expensive development work in an area which proved to be unproductive.

The same Kern Drilling Co. diesel rig is now in use at a location where very unusual conditions disclose other advantages. The location is in the Rio Vista gas field near Stockton, Calif., and lies in a peat bog. There is an abundance of water, since the test is below sea level on an island in the Sacramento River and is surrounded by dikes. Also, there is no shortage of gas, since the test is in the largest gas field in California. In spite of the abundance of these commodities, the diesel rig was selected because it was feared that a steam plant would set fire to the peat bog. The derrick at this location had to be supported on a large



Mechanical rig powered with 200 hp. diesel engines in use in the Rio Vista gas field of northern California. Location in a peat bog made their use highly advisable

timber mat to prevent sinking in the soft peat. A boiler plant would have required a costly foundation of some kind for the same reason. Also, the transportation problem would have been difficult.

One large operator in the Wilmington-Long Beach field has adopted the use of butane rigs exclusively in the town-lot sections. Here the crowded locations and the many municipal regulations make the operation of boiler plants burdensome.

Rigs powered by internal-combustion engines have been finding favor for some time in foreign wildcat operations. On most foreign wildcats oil is used for fuel because it is more easily transported than other combustibles. Since diesel rigs require less oil than steam rigs they are advantageous where oil transportation is expensive. The Iniskin Drilling Co. recently adopted the use of Caterpillar diesels for mud-pump operation at its Alaskan wildcat, and reports a 50 per cent saving on fuel oil. This is worth while, since the oil must be shipped from California and hauled by tractor 6 miles overland to the drilling site. Other units of this rig are steam driven.

Some foreign wildcats are in such out-of-the-way locations that it is impractical to haul in oil even for diesel engines. This is the case in the Peruvian jungles where Drilling & Exploration Co. is drilling a test for Ganzo Azul Oil Co. Steam is therefore used, the boilers being fired on wood cut by a crew of 40 natives. It is probable, however, that a test equally out of the way in treeless country would be drilled with diesel engines.

Most internal-combustion engines, including many diesels, can be converted easily to use butane, gasoline, or natural gas; whichever is most readily available. Thus internal-combustion rigs are little less versatile than steam rigs in regard to fueling.

Device Will Determine Carbon Dioxide Content of Air

HARTFORD, Conn., Aug. 22.—A new device for ascertaining the carbon monoxide content of any given air space has been perfected and will be made available to the public within a short time, the engineering department of the Travelers Insurance Co. announced today. Almost negligible in cost, and so simple that it can be constructed by anyone with slight mechanical knowledge, of materials obtainable from a hardware store and a drugstore, the device, it is believed, will be welcomed by factory, commercial vehicle, and garage owners who have been unable to make needed tests in the past.

The menace of carbon monoxide has long been recognized in the operation of commercial motor vehicles, garages, and factories. Colorless, odorless, and tasteless, carbon monoxide gives no warning. Exposure for one hour to only 15 parts of carbon monoxide to 10,000 parts of air may cause collapse. Breathed in sufficiently greater concentration, it causes death. Tests have shown that headache, nausea, excessive fatigue and general impairing of the mental and physical faculties are common results of inhaling air contaminated with a less than fatal concentration of the gas.

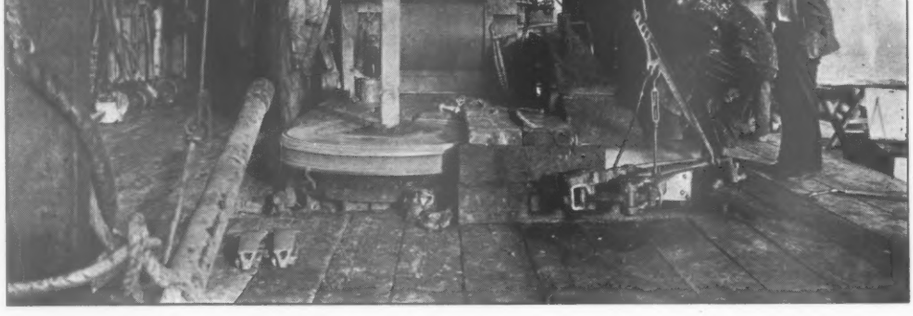
Cases of carbon monoxide poisoning are not confined to persons who work with and around the motors or other agencies that generate the gas. In December, 1933, a series of tests were conducted under the auspices of the Travelers, by the Cities Service Oil Co., with the joint cooperation of the Motor Vehicle Department and the Department of Health of the State of Connecticut, to determine the degree of hazard due to carbon monoxide in the interiors of cars while in operation. Testing the general run of traffic as objectively as possible, it was found that private cars also contained carbon monoxide, generally varying in concentration with the mechanical condition and structure of the car. Definite conclusions were impossible from the limited number of cases studied, but the tests demonstrated beyond doubt that under conditions altogether too commonly found, carbon monoxide can and does exist in pleasure cars in sufficient amounts to have a substantial bearing upon the frequency and severity of many automobile accidents that have hitherto been regarded as virtually inexplicable. Cases of "poor judgment," mental lapses, headaches, or drowsiness, may of course be attributed to as many causes, but may as well be the result of a single factor of carbon monoxide poisoning.

According to J. B. Ficklen, the inventor of this device, the new detector permits tests to be made at greatly reduced cost. The simplicity of its construction, furthermore, is such that it can be operated by persons having limited knowledge of testing technique, thus enabling the vehicle or factory owner to make his own tests of questionable conditions.

This method depends upon the conversion of carbon monoxide into carbon dioxide by combustion and the reaction of this carbon dioxide with an earth-alkali hydroxide, using phenolphthalein as an indicator. By means of an ordinary bicycle pump, the atmosphere to be tested is drawn through a filter, removing all carbon dioxide and hydrocarbons from the air. The carbon monoxide, remaining unchanged, is then converted to carbon dioxide by drawing it over an ordinary cigarette lighter coil. The product is then bubbled through the alkali solution. With the capacity of the pump known, it is only necessary to count the number of strokes until the color of the solution disappears. By referring to a table computed on the basis of carbon monoxide concentrations that are negligible, slightly harmful, and dangerous, with finer gradations between these divisions, the amount of carbon monoxide in the tested atmosphere is ascertained to a degree of accuracy sufficient for all practical purposes.

The Travelers will follow its usual policy of making the specifications and instructions available to anyone interested in promoting safety and the welfare of those who might be exposed to poisoning by carbon monoxide.

SAFETY—Use Bridge Over Rotary Table



In a great many instances it is up to the driller and his crew to make the drilling rig safer for themselves by using the material at hand. The homemade bridge over the rotary table is constructed from two short lengths of 8-inch by 10-inch timbers and two short lengths of 3-inch by 12-inch rough lumber. This makes a substantial platform and the pipe-racker will make good use of it as it will allow him to get from the drawworks side of the rotary table to the V-door side. Otherwise, he would need to go around the table or step across the rotary shaft, which on some tables is exposed and a source of danger.

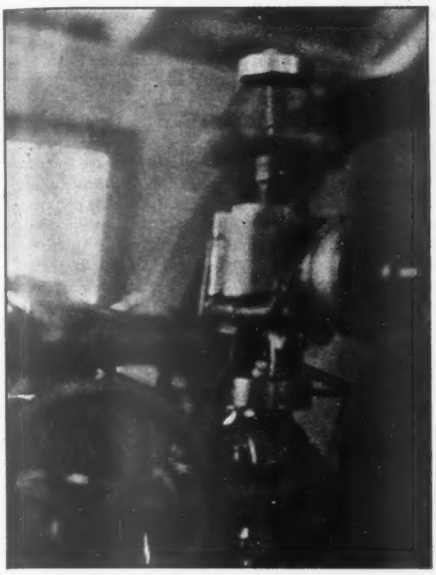
The driller has also protected himself from the danger of the spinning line rubbing across his back by the bent 1-inch pipe which is attached to the drawworks, just in front of the cathead, and the floor. The heavy vertical roller just back of the driller enables him to stay clear of the rope while the pipe is being spun up.

The catline is amply protected by pieces of 3-inch attached to the head-boards above each cathead.

Over the rotary chain guard and just in front of the drawworks is a bent piece of 1-inch pipe which will prevent the jerk line from fouling on the chain guard. Just in front of it is a 6-inch to 2-inch swagged nipple for the oiling of the rotary chain. The handle of the slip which is laying on the pipe rack is of the safety type. It has a heavy steel washer on each side which will prevent damage to the workman's hand.

The joint of drill pipe in the left foreground is supported by the line which is attached to the derrick just above and to one side of the V-door. It replaces the old "hurry-up" post which was located in the center of the bridge over the rotary table.

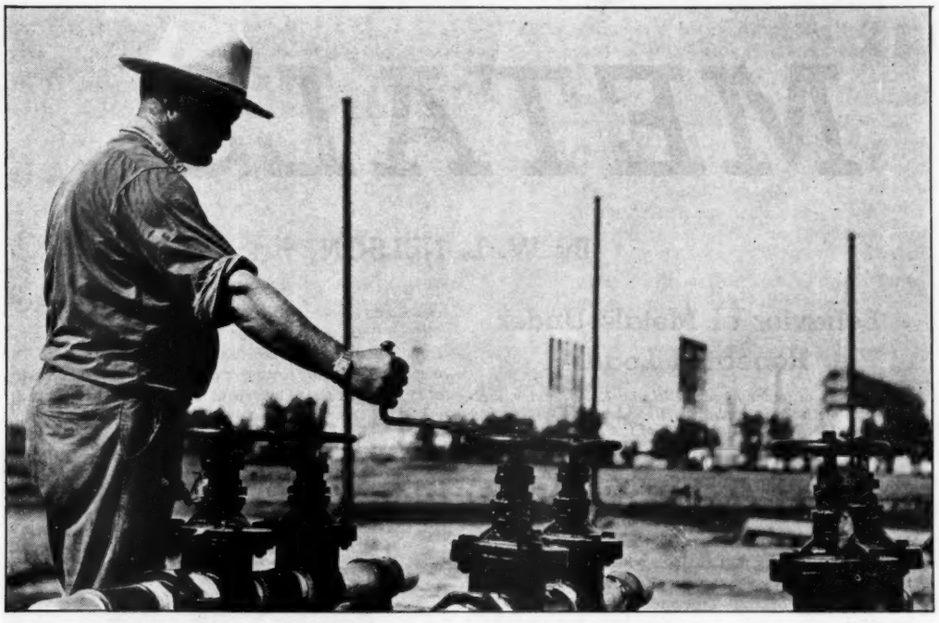
OPERATING IDEAS



Governor-Gear Guard

A welder for one of the large companies operating in the Seminole, Okla., district designed and installed this governor-gear guard for a Bessemer engine. It is made from light sheet steel and incases the governor gears. The guard can be easily removed but protects the lease worker from being entangled in the gears while oiling. The company supervisors had the welder make the same type guard for their other installations on its producing properties.

Light Valve-Wheel Extension Handle



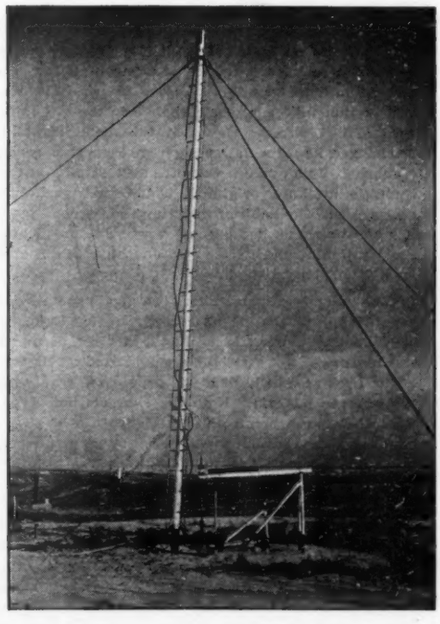
A pumper operating a large lease in the Ada field of Oklahoma finds it to his advantage to have an extension lever for opening valves on central manifold. As some of these valves are not open every day, they oftentimes corrode and stick. This little tool, designed from a piece of sucker-rod, gives the operator ample leverage for opening and closing the valves and because of its weight and design it does not strain the valve handle.

Lights for Pumper

A pumper operating a single well in an isolated spot on the Gulf Coast of Texas decided he needed some lights in his lease house. Taking a generator from a salvaged car and belting it to the power take-off of the engine, he keeps two batteries fully charged. These furnish sufficient power to light his house and operate his radio. At first the radio was noisy so he put a large suppressor on the generator which eliminated the noise.

Portable Forge for Drilling Rig

One rotary contractor operating several rigs in Oklahoma fields makes use of portable forges for heating tool joints to remove them from the drill pipe when replacements are necessary. As shown, the two portable forges are mounted on the end of the dog house skid, and are operated by a steam turbine blower. Power consumption is small.



Ladder on Cleanout Mast

On this mast at a jack well in the East Panhandle field, an operator has taken the steel ladder from an old steel pumping derrick and welded it onto the 4-inch pipe mast. It apparently provides a stronger and safer ladder than those where short sections of sucker-rods are welded on alternate sides.

Progress in METALS

By W. L. NELSON

Behavior of Metals Under Repeated Loads

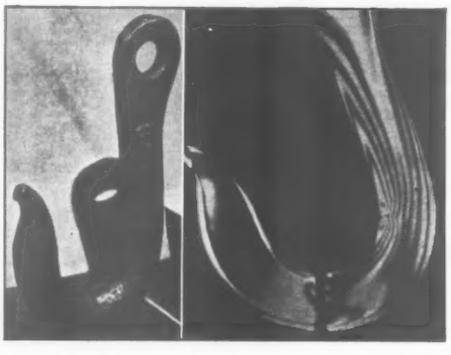
Abstract of paper of same title by E. A. Snader, metallurgist of the Westinghouse Electric & Manufacturing Co., from the Review, June 1937, of the American Society for Metals.

In the petroleum industry there is no end of examples of drilling, producing, refining, and machine parts that are subject to fatigue stress. In refining there are many pump shafts and machine parts that are affected—and particularly, valves and fittings which fail by fatigue. Some companies, such as the Edward Valve & Manufacturing Co. of East Chicago, conduct fatigue tests on valves as a regular laboratory test—and even conduct tests at elevated temperatures in an effort to duplicate the high-temperature, high-pressure conditions existing in many refineries. In production and drilling, tools strings are repeatedly stressed and are necessarily of such a design that notches, corners and reductions in area are almost unavoidable at many points. These notches, etc., tend to aggravate any tendency toward fatigue failure, and hence the production branch of the industry has a real problem in avoiding fatigue failure. The abstract follows:

"It can readily be understood how engineers, before knowledge of the structure of metals became so widespread, on seeing the failure of a part that they knew had an initial elongation of, say, 25 per cent, would ascribe that failure to some change in the structure of the metal itself, and say that the metal crystallized or changed its form . . . or a garage mechanic, seeing a crankshaft or an axle break off short that he knew he could tie into knots originally, would say that the metal crystallized. The habit of referring to fatigue as crystallization of metals has become very widespread among the lay public, and if I can do anything to dispel that idea, I will be satisfied."

The crane hook shown here is a good example of the type of failure that is characteristic of fatigue. The steel in such a hook is as ductile a piece of material as you can get, yet a fatigue crack started on the inside of the hook at a little nick and progressed transversely through the material. Note the characteristic type of failure—i.e., the metal did not elongate a stretch but broke straight through the material much as a piece of glass would break. The photoelastic study of the crane hook clearly shows the concentration of stress at the nick. The function of a metal part is to transfer the load that is applied to it to another part. Thus, the whole piece or material is under stress and at such points as the nick the stress must avoid or pass around the nick or irregularity in the material. Thus. stresses are concentrated at notched sections such as the base of threads, sharp corners, sudden changes of dimension, nicks in the surface, nonmetallic inclusions, carbide particles, blowholes, corrosion pits, etc. These irregularities are frequently the starting point from which fatigue cracks develop.

The vital effect of notched sections has been studied from the standpoint of the stress that the materials can withstand for a given number of cycles of stress reversal. Thus for the normal material a stress of 60,000 pounds per square inch can be sustained for 100,000 cycles, but if the material is subjected to 10,000,000 or more cycles, the maximum stress that it can sustain is only 51,000 pounds per square inch. The fatigue limit is determined by tests in which the specimen is actually stressed for the number of cycles. The common type of testing machine consists essentially of a rotating shaft loaded at the center. As the shaft revolves the outermost fibers of the material are alternately subjected to compression and then tension during each revolution of the shaft. A number of different specimens are tested at different loads and some fail at a few revolutions, and the lightly loaded ones last much longer.



Left: Fatigue fracture. Right: Photo-elastic study showing lines of stress concentration surrounding nick where fatigue fracture started

ENDURANCE LIMITS OF FIVE SPECIMENS

	Endurance limit (lb. per sq. in.)
Normal surface	51,000
28 threads to the inch	43,000
24 threads to the inch	37,000
1 thread or groove, ⅜-in. depth	21,000
1 thread or groove, ¼-in. depth	12,000

The effect of notches (see table) has been studied, using five specimens of steel of identical composition but having different surfaces. One had a normal machined surface condition, two had threaded surfaces, and two were for rods that had a single notch on the surface of each. The notch depth and size was the same on the two single-notched specimens as for those that were threaded. However, the single-notched specimens failed at much lower stress because the entire stress was concentrated at the single-notched section.

Notches are so dangerous that designers have sometimes found that a thinner section is stronger than a larger one which has a notch in it.

D. J. McAdam, Jr., in "Transactions, American Society for Steel Treating," Volume 2, Page 355 (1927), published some figures showing the effect of corrosion fatigue. For instance, a 5 per cent nickel steel had a tensile strength of 132,000 pounds per square inch and an endurance limit of 66,000 pounds per square inch in air. Under a stream of fresh water the endurance limit was 19,000 pounds per square inch. Even a 13 per cent chromium stainless iron is reduced from a normal endurance limit of 59,000 pounds per square inch to 40,000 pounds per square inch in fresh water and to 13,000 pounds per square inch in salt water. These figures give some idea of the great damage that can be done by fatigue simultaneous with corrosion.

"One feature of special interest in a consideration of corrosion fatigue is the complete loss of the beneficial effects of heat treatment and cold working. There is an intrinsic corrosion fatigue limit for each metal and corroding medium, so that not matter how a piece of steel is heat treated or cold rolled, the endurance limit under corrosion is the same, unless, of course, the heat treatment is such as to render the material more corrosion resistant, such as the heat treatments applied to alloys in the stainless group."

Choice of Bolt Stock

Selection of bolts and nuts in petroleum equipment construction depends on the properties desired and the necessity of having these joining parts stronger than the larger and heavier parts which they hold together. As the bolts and nuts are seldom exposed to the severe corrosive conditions because of their position outside of the processing equipment, they need not be corrosion resistant. Particularly desirable features are strength and toughness. Such requirements are satisfied by the low-alloy structural steels such as those indicated in Table 1.

Approximate tensile strengths of these materials at elevated temperatures are given in Table 2. In order to develop the most suitable physical properties, the alloy steels should be quenched in oil and tempered to temperatures of 1,100° F. to 1,200° F. Higher strengths are produced by using lower tempering (or drawing) temperatures, but the materials lack ductility. All of the steels here shown are suitable for meeting A.S.T.M. Specification A-96-33, Class C (2½ inches in diameter and under) for alloy-steel bolting materials for high-temperature service. This specification is:

Tensile strength, lb./sq. in.	125,000
Yield point, lb./sq. in.	105,000
Elongation in 2 inches, per cent	16
Reduction in area, per cent	50
Brinell hardness	260-320

For high-temperature service two types of carbon-steel nuts are recommended. One of these is a heat-treated nut finished to a Brinell hardness of about 190, and the other an oil-quenched nut having a hardness of about 280 Brinell. Both of these are suitable for high-temperature service, but the hard oil-quenched nut will stand up better under the battering of heavy wrenches.

Stripping tests at high temperatures on these two types of nuts are given in Table 3.

TABLE 1—CHEMICAL ANALYSES OF BOLTING STOCKS

Element—	S.A.E. 4140	S.A.E. 3140 (Mayari "A")	Supertemp
Carbon, per cent	0.4	0.4	0.35
Manganese, per cent	0.65	0.65	0.8
Chromium, per cent	0.95	0.6	0.45
Tungsten, per cent	..	..	1.00
Nickel, per cent	..	1.25	..
Molybdenum, per cent	0.2	..	..

TABLE 3—STRIPPING OF THREADS AT HIGH TEMPERATURES

Stress (lb. per sq. in.) (Loads that can be sustained for 1 hr. without stripping threads of nuts)

Temperature (°F.)	Treated nut	Oil-quenched nut
700	196,000	230,000
800	175,000	190,000
900	142,000	150,000
1,000	105,000	121,000

TABLE 2—STRENGTH OF BOLTING STOCK AT ELEVATED TEMPERATURES

(Lb. per sq. in.)

Temperateur (°F.)	S.A.E. 3140 Tempered to 1,100° F.	S.A.E. 4140 Tempered to 1,100° F.	Supertemp Tempered for 1,100° F. service	Supertemp Tempered for 1,100° F. service
800	85,000	90,000	.....	.....
900	70,000	73,000	90,000	120,000
1,000	.....	.....	75,000	100,000
1,100	.....	.....	45,000	.....

Maintenance of Mud to Prevent Blowouts

By RALPH L. HOCK

Every year many thousands of dollars are spent in combating wells that have blown out. In many of these cases excessive losses could have been prevented by exercising greater care in the choice and handling of drilling muds. It must be pointed out that a good mud does not make a well fool-proof from blowouts, but cuts the probability of such down about 90 per cent. Several instances are on record in which the best of mud would be of no assistance in preventing the well from blowing out. For this reason every well drilling in dangerous or unknown territory should be provided with a good blowout preventer, mastergate and gate valve on the flow line. Yet their presence alone is not enough; they should be tested every day and their operation explained to all the crew. A daily drill prepares them for meeting a dangerous situation.

The sudden expulsion of drilling fluid, uncontrolled, from an incomplete well is called a "blowout." This is usually caused by a subsurface pressure greater than the hydrostatic pressure of the drilling fluid in the hole. If the pressure in a sand exceeds the hydrostatic head of the mud it will push mud out of the hole and soon flow uncontrolled from the well. Gas flowing from a sand generally carries small grains of sand with it at a high velocity. This sets up an abrasive action and soon cuts away the surface pipe. Sometimes the surface or conductor pipe is blown out and the well craters. Besides losing a rig there is danger of losing the oil and gas in the sand in addition to the many lawsuits for damages that arise.

In some instances the mud being used might be in bad condition. It may be either gas-cut, of poor colloidal content, or have some other undesirable quality which will lead to trouble in a normal pressure sand. Another cause of blowouts might be the result of certain mechanical operations. These important factors, formation pressure, physical condition of the mud, and mechanical effect are herewith discussed in detail to present a better understanding of the problem and some of its solutions.

Formation Pressures

Normal hydrostatic pressure is illustrated in Figure 1. This condition is the one most commonly encountered. The gas is held below the surface by a pressure equivalent to the hydrostatic head of a column of salt water the same height as the depth of the gas. In the Gulf Coast area the oil sands are thought to be outcropping in the Gulf of Mexico, consequently the depth of the gas below sea level is the governing factor in this case. Water has filtered down through the surface to the oil sand and has built up a hydrostatic pressure on the entrained gas. While this water was passing through the earth it dissolved certain salts and has thus raised the specific gravity of the water. This increase in specific gravity will cause a proportional increase in the hydrostatic head.

It has been found that the average specific gravity of salt water is 1.03. This equals 8.55 pounds per gallon. This would develop a pressure of 44.6 pounds per square inch for each 100 feet of fluid height. Ordinary native clays sometimes make a good drilling fluid. For example one may be chosen weighing 9.5 pounds per gallon, to give a pressure of 49.6 pounds per square inch for each 100 feet of height or a differential pressure of 5 pounds for each 100 feet.

Actual field data, shown in the table, verify the value of this relationship in predetermining pressures.

Figure 2 shows the condition of formation pressure when greater than normal hydrostatic pressure. The pressure in this case is caused by a column of salt water whose surface is at an elevation higher than the top of the hole. A common example similar to this is the artesian well.

Pressures in excess of normal hydrostatic pressure may also be caused by shifting formations as shown in Figure 3. In this situation the gas has been trapped in an impervious formation, compressed and held under pressure by a shift in for mation. This type occurs frequently in regions of faults.

Regardless of the manner in which the pressure was developed, it must be counterbalanced by the hydrostatic head of the drilling fluid. Some pressure gradient is necessary to force the mud solids and colloids up against the wall and form a filter cake. Water from the mud will be forced out into the formation and the solids retained at the wall of the hole. The sooner this wall is made impervious to gas the less the mud will be gas cut. Time required to build this wall is dependent upon the pressure gradient, porosity of the surrounding formation and the colloidal content of the mud.

Physical Condition of the Mud

Weight. To counterbalance a high gas pressure the mud must have sufficient weight to build up a greater hydrostatic pressure. This weight is usually built up by soluble salts, colloidal matter and solids from the native clays being drilled. If this

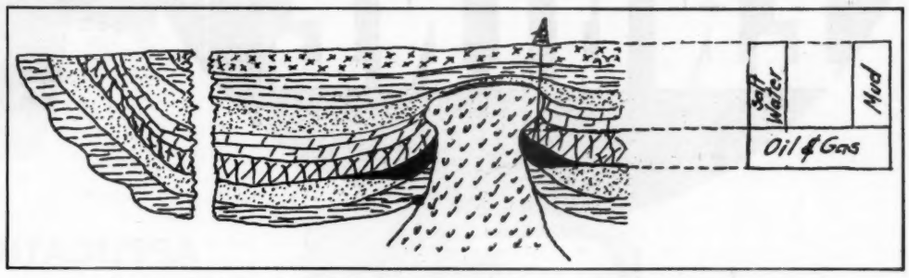


Figure 1—Simplified drawing to show normal hydrostatic pressure

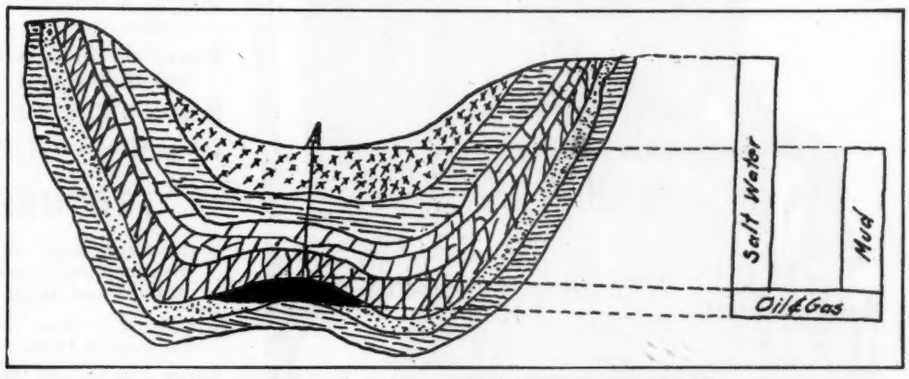


Figure 2—Greater than normal hydrostatic pressure

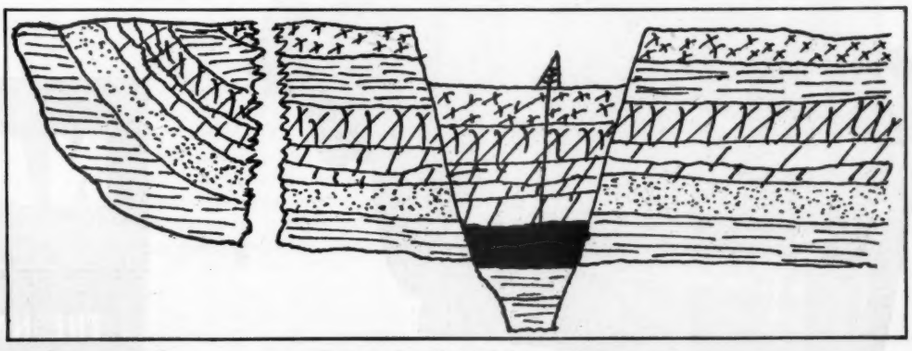


Figure 3—Shifted formation

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weight is not sufficient a weighting material must be added. The weight is expressed in pounds per gallon or in pounds per cubic foot.

It is imperative to keep a constant check on the mud weight when drilling in high pressure formations. This is necessary to determine whether the mud is being gas-cut. By gas-cut is meant the entrainment of gas in the mud in such a manner as to affect a reduction in the unit weight. Gas picked up by the mud in the hole will expand as it approaches the surface because of the reduction in pressure. At a depth of 5,000 feet gas would normally be under a pressure of 2,230 pounds per square inch. One cubic foot at this pressure would expand to a volume of 153 cubic feet at atmospheric pressure. Therefore a slight amount of gas in the mud at the bottom of the hole will make a vast difference in the hydrostatic head as it expands on approaching the surface. Mud severely gas-cut will gush out of the flow line intermittently because of gas pockets.

Gel strength. Gel strength of a drilling fluid is essential to carry up the cuttings from the bit and to prevent them from settling back down around the bit and drill collar when circulation is stopped. High gel strength is a dangerous property when gas is encountered. It keeps the gas from escaping from the mud while at the surface with the consequence that a gas-cut mud is pumped back in the hole. There is no known relation between viscosity and gel strength and quite often field men fail to show a proper distinction between the two.

Gelatinizing represents the solidification of the whole system, including the dispersion medium and the dispersion substances, into one solid mass. In drilling fluids this gelatinizing action is due mainly to electrolytes as differentiated from temperature-gelatinizing. Increasing the temperature of a bentonitic mud will give an increase in viscosity and gel strength because of the increased hydration of the colloidal particles in the mud.

The transformation from the colloidal sol to the semisolid gel is accompanied by an increase in viscosity. Although a mud might be extremely viscous the gel strength can be very low, i.e., not show an increase in viscosity on setting. Muds with a low viscosity usually have a low gel strength. A high gel strength mud will channel in the pit and ditch. This permits gas-cut mud to go right from the flow line back into the suction without being properly aerated.

Viscosity. Liquids possess a definite resistance to change of form. This property is called viscosity; it is expressed in dyne-seconds per square centimeter, or poises. Water at 60° F. and under one atmosphere pressure has a viscosity of one centipoise (one-hundredth of a poise). The mud with a low viscosity permits gas to escape readily, whereas a viscous mud will hold it in mechanical suspension. In order to readily pump off gas pockets the viscosity should be low. It varies proportional to the solid content and may be increased by the addition of colloidal matter.

Stability. The general property of a mud which is often taken for granted to be satisfactory is the stability. Once a gas pressure is encountered there is little opportunity to build it up. This is the time it should be at its best. A low colloidal content is indicated by a settling test, and an unsatisfactory alkalinity by the Wulff instrument.

A slight change in hydrogen ion concentration might cause the colloidal particles to flocculate thus destroying all the gelling action and wall building property. In such a condition the weight material will tend to settle out rapidly and thus lower the hydrostatic head.

Mechanical Effect

A paper on, "Changes in Hydrostatic Pressure Due to Withdrawing Drill Pipe From the Hole," has been prepared and presented before the American Petroleum Institute which adequately discusses the mechanical effects of withdrawing drill pipe. Conclusions reached in this paper are as follows:

The pressure reduction obtained when the drill pipe is withdrawn is related to the gel strength of the mud. In cases of low gel strength the reduction was small whereas reductions up to 400 pounds per square inch were obtained with a high gel strength mud.

Viscosity undoubtedly has some influence on the pressure drop, however, its effect is small compared with the effect of gel strength. Lower pressure drops were obtained when a mud having a viscosity of 45 centipoises at 600 r.p.m. was used than when a mud having a viscosity of 35 centipoises at 600 r.p.m. was used.

There is no direct relation between the weight of the mud and pressure reduction to the withdrawing the drill pipe from the hole.

Pressure drop due to the withdrawing the drill pipe is proportional to the length of drill pipe in the hole.

The pressure drop was not appreciably affected by the rate of withdrawal of the drill pipe.

An enlarged drill collar used to simulate a "balled-up" drill collar shows very little increase in the pressure drop. Instances are known when the bit was "balled-up" to such an extent that the fluid was pulled out of the hole when a trip was made. This indicated an enormous pressure reduction.

It is noted that most of the pressure drop occurred with the slightest upward movement of the pipe.

It is shown that the amount of pressure reduction obtained when the drill pipe is withdrawn is related to the annular space between the drill pipe and the walls of the hole. Sufficient data have not been obtained to establish a relationship between these quantities.

The major factors governing the pressure reductions are gel strength and length of the pipe in the hole.

TABLE 1—FORMATION PRESSURES FOR SEVERAL GULF COAST FIELDS*

Name of field—	Depth at which pressure was observed (ft.)	Observed pressure lbs./sq. in.	Equivalent hydrosatic pressure of water lbs./sq. in.	Equivalent pressure of a 10-lb. mud lbs./sq. in.
Anahuac	7,045	3,190	3,057	3,663
Conroe	5,103	2,228	2,215	2,653
Conroe	5,030	2,278	2,183	2,615
Conroe	5,158	2,207	2,239	2,682
Corpus Christi	4,020	1,528	1,744	2,090
Dickinson	8,010	3,775	3,476	4,165
Dickinson	9,100	4,331	3,949	4,732
Dickinson	8,707	4,210	3,778	4,528
Flour Bluff	6,624	3,026	2,874	3,444
Greens Bayou	Casinghead	5,000	3,515	4,213
Hastings	6,035	2,731	2,619	3,138
Raccoon Bend	3,525	532	1,530	1,833
Saxet South	5,700	2,537	2,473	2,964
S. Houston	4,705	2,172	2,041	2,447
Sugarland	3,725	1,665	1,617	1,937
Sugarland	3,682	1,416	1,588	1,914
Sugarland	3,556	1,459	1,543	1,849
Thompson	5,156	2,291	2,238	2,681
Thompson	5,225	2,197	2,268	2,717

*Reprinted from U. S. Bureau of Mines Information Circular 6938.

Conditioning the Mud

Before starting treatment of mud on a near-blowout the following things should be determined:

Gel strength. This can be measured by various instruments, the most common being the Stormer and Marsh viscosimeters. The general procedure followed with the Stormer is to find what driving weight, in grams, is required to just start the cylindrical drum rotating after the gel has been broken down by previous agitation. The mud is then allowed to gel 10 minutes and the driving weight again determined. This time the mud not being agitated before testing. The difference in driving force is the indication of the gel strength.

With the Marsh viscosimeter the viscosity is determined in the normal manner (A.P.I. specifications) and another test after the mud has set 10 minutes in the funnel, the difference in time indicating the gel strength. While these methods give results with different units and have no scientific basis they are the best and simplest known. It is practically impossible to set a standard for gel strength since the general nature of muds varies a great deal from well to well in the same field.

Weight. Weight of the mud is usually determined by use of the Braun mud hydrometer. Other instruments are available, but this type has proven very satisfactory for field use. These hydrometers are calibrated both in pounds per gallon and pounds per cubic foot. The cup at the bottom is removed and filled with mud. It is then replaced and the hydrometer placed in water. The depth to which it sinks is dependent upon the specific gravity of the mud and the weight can be read directly on the hydrometer.

Calibrate Instrument

Care must be taken that the instrument is calibrated frequently. Water is used for test purposes. its weight being 8.33 pounds per gallon. This calibration is done by adjusting the weight of buckshots on the inside of the hydrometer. When measuring the weight of a gas-cut mud the weight should be taken as quickly as possible. Gas expanding in the mud will be forced out and force some solid out with it, thus giving erroneous results.

Viscosity. The same instruments used for measuring the gel strength are used to measure the viscosity. Marsh viscosimeters are used in the field because of their simplicity and durability. The temporary standard A.P.I. procedure is followed: 1,500 cc. of mud is poured into the funnel and 1,000 cc. allowed to flow out, the time, in seconds, required being called the viscosity. A similar procedure is to measure 500 cc. in and time the flow out of the funnel. It has been found that the most accurate indication of the true viscosity of a mud can be determined by the use of a Stormer viscosimeter. The instrument is usually calibrated with standard solutions at 600 r.p.m. To test a mud it is placed in the cup and a driving weight added until the cylinder turns 600 r.p.m. The viscosity is then determined by referring the driving weight to the calibration chart.

Stability. The settling test indicates whether there is too little colloid in the mud. This test is performed by adding 50 cc. of mud and 450 cc. of water in a 500 cc. graduated cylinder, shaking well and letting it settle 30 minutes. At this time there should not be over 10 cc. of free water at the top of the cylinder, if so, it indicates a shortage of colloid.

One of the best indications of the mud's stability is the hydrogen ion concentration. This is more commonly known as its pH, which is the Naperian logarithm of the reciprocal of the activity of the hydrogen ion concentration. A neutral solution is one with a pH of seven. As this number becomes smaller it indicates an increase in acidity, the lowest number on the scale being one. As the number increases (the highest being 14) it indicates an

(Continued on Page 71)

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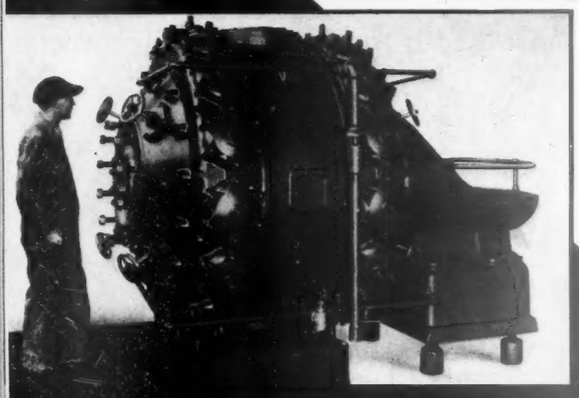

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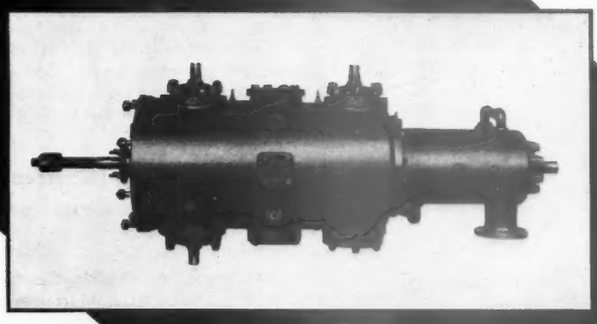
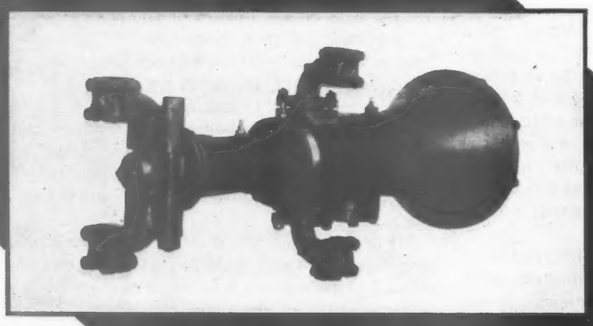
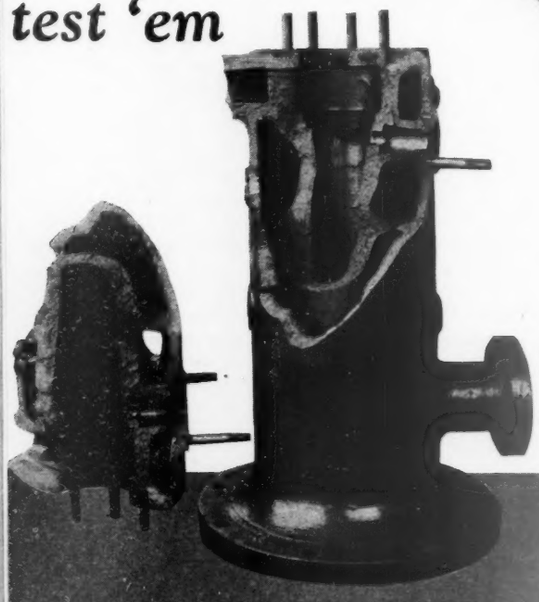
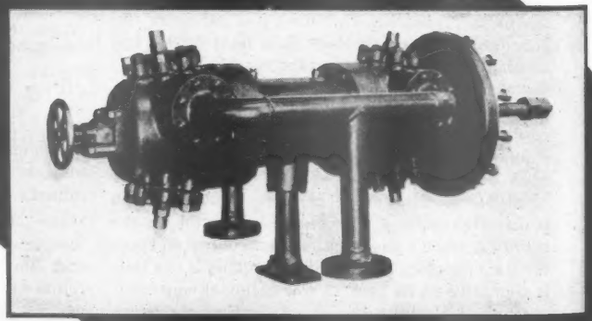




. . . and here's one way we test 'em



A cylinder of Meehanite Metal, designed for 1500 pounds working pressure. Subjected to hydrostatic pressure it ruptured at 10,000 pounds. Note the uniform metal structure of both thick and thin sections.



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Acidizing Gas-Producing Wells in West Virginia

By J. P. O'DONNELL

Ranking fifth among all states in total production and very close to, if not at, the top in value at the wells, the natural gas industry of West Virginia occupies an important position in the supplying of this fuel to eastern consuming centers. Approximately 70 per cent of the natural gas produced in West Virginia is transported in interstate commerce, principally to Ohio and Pennsylvania. West Virginia now ranks as the greatest natural gas producing state in the East and, in 1935, the last year for which data are available, the state's production of 115,772,000,000 cubic feet had a value of $19,612,000 at the wells. Only New York, Pennsylvania and Indiana, in that order, among all states, ranked higher in the average

Fig. 1—Bringing acid to location

price per thousand cubic feet at the well but the total value of West Virginia natural gas far exceeded any of these.

The increasing importance of natural gas among West Virginia's mineral industries is shown in drilling statistics. During the first half of this year completions for the state were estimated at 338 of which 210 were gas wells. One of the results of this trend has been attempts to stimulate production, among them being the acid treatment of wells producing from lime formations.

Early Experiences

The first trial of inhibited hydrochloric acid on a gas well in the state was not effective in increasing the production but the fact that the flow continued undiminished instead of following an average decline curve was regarded as sufficient evidence of its value to warrant further trial. The second and virtually all subsequent uses of acid were notably successful in increasing the production of lime formation wells, particularly of those producing from the Big lime, and since then more than 100 gas wells have been treated. West Virginia is now the only state in which acid treatment of gas wells is carried on on a comparatively large scale, due in a large measure to the fact that the value at the wells there averages around 19 cents per thousand cubic feet against average prices as low as 2 to 4 cents in Mid-Continent and Rocky Mountain fields.

Both old and new wells are being treated successfully as is apparent from Table 1, the new wells being those in which the production initially and at the time of treatment is the same. All these wells are in Boone, Logan, Lincoln, Rawleigh and Kanawha counties in the southwestern section of the state.

Among the first gas wells to be treated with acid in West Virginia was the No. 45 Yawkey-Freeman in Logan district, Logan County (Ref. 10). This well, which had an initial open flow of 360,000 cubic feet, was treated in October, 1935, shortly after completion. This treatment failed to increase production but apparently was responsible for the maintenance of production with little abatement since. The second well treated on this lease, No. 34, was drilled in 1928 and may be regarded as an outstanding example of the possibilities in treating older wells (Ref. 11). Its initial open flow was 940,000 cubic feet which had declined to 134,000 feet at the time of treatment in April, 1936. After treatment the flow was gauged at 1,700,000 feet. One of the most successful new well treatments was that of the No. 2 G. T. Hill in Boone County (Ref. 30). This well came in at 40,000 cubic feet per day and this production was raised to 2,700,000 cubic feet upon treatment.

Producing From Big Lime

All wells in the accompanying tables are producing from the highly reactive Big lime, the gas wells in the five previously mentioned counties and the oil wells in Roane County. This formation, a part of the Greenbrier series in the Mississippian, is described as follows in "Geology and Natural Resources of West Virginia," published this year by the West Virginia Geological Survey: "During the interval of the Middle Mississippian characterized in this region by clear seas, deposits of nearly pure calcium carbonate were formed which have become the thick, compact, very fossiliferous limestone of the Greenbrier series, known in the oil fields as the Big lime . . ."

Other formations in West Virginia which have been treated but not with the success that has characterized the Big lime are the Keener and Big Injun, both of which are in the Pocono series, and the Corniferous which is found at the bottom of

TABLE 1—RESULTS OF ACIDIZING

Ref. No.	Lease—	No.	Production: Initial open flow	Production: Before treatment	Production: Following treatment
	COMPANY A:				
1	Yawkey-Freeman	31	1,532,000	1,470,720	3,000,063
2	Yawkey-Freeman	39	248,000	94,560	359,000
3	Yawkey-Freeman	38	3,600	3,600	3,600
4	Yawkey-Freeman	33	20,000	20,000	65,000
5	Yawkey-Freeman	29	554,000	497,000	925,000
6	Yawkey-Freeman	36	786,000	212,000	600,000
7	Yawkey-Freeman	37	2,000,000	800,000	3,600,000
8	Yawkey-Freeman	53	260,640	115,792	300,000
9	Yawkey-Freeman	30	600,000	200,000	600,000
10	Yawkey-Freeman	45	360,000	360,000	360,000
11	Yawkey-Freeman	34	940,000	134,000	1,700,000
12	Yawkey-Freeman	33	550,000	250,000	800,000
13	Yawkey-Freeman	9	190,000	70,000	600,000
14	Yawkey-Freeman	20	90,000	50,000	110,000
15	Yawkey-Freeman	11	785,000	286,000	550,000
16	Yawkey-Freeman	4	1,108,000	300,000	552,000
17	Yawkey-Freeman	13	650,000	450,624	980,000
18	Yawkey-Freeman	2	1,400,000	552,000	781,000
19	Yawkey-Freeman	1	4,532,000	979,000	1,450,000
20	Fannie White	2	32,000	32,000	45,000
21	Myrtle White	1	431,000	431,000	1,500,000
	COMPANY B:				
22	Dingess Run	37	800,000	435,000	1,300,000
23	Dingess Run	17	200,000	300,000	850,000
24	Dingess Run	24	1,500,000	212,000	525,000
25	Guy-Mercantile	2	3,705,150	262,000	3,250,000
	COMPANY C:				
26	Garrett	2	1,243,200	400,000	879,000
27	Garrett	1	1,416,480	450,000	1,303,000
28	Garrett	3	176,160	47,000	72,000
29	Garrett	5	750,000	431,000	850,000
	COMPANY D:				
30	G. T. Hill	2	40,000	40,000	2,700,000
31	Glen Hays	1	184,320	184,320	780,000
	COMPANY E:				
32	Huntington	48	70,000	70,000	466,000
33	Beaver Coal	17	65,000	65,000	220,000
34	Beaver Coal	16	10,000	10,000	90,000
35	Beaver Coal	18	45,000	45,000	980,000
36	Beaver Coal	10	55,000	55,000	436,000
	COMPANY F:				
37	Ira Hager	1	45,000	45,000	168,000
	COMPANY G:				
38	Alderson	4	490,000	490,000	1,200,000
39	Lawson	1	450,000	50,000	240,000
	COMPANY H:				
40	J. W. Jeffers	2	200,000	108,178	650,000

Fig. 2—Arrangement of equipment for pumping 3,000 gallons of acid into the well

the Marcellus, a part of the Devonian, which contains limestone strata of varying thicknesses. The Pocono series is a section of the Mississippian. Because of the fact that it is nearly a pure calcium carbonate, the Big lime has been by far the most receptive to acid treatment.

According to James G. Vandergrift, of Spencer, W. Va., who does practically all acid treating in West Virginia, methods do not vary greatly from those employed elsewhere. In treating a gas well, the well is tubed and a packer set 20 to 30 feet above the pay streak. An oil seal is run in before the acid to prevent it from acting on formations above the pay and to center the action on the pay. The hydrochloric acid, containing a corrosion inhibitor and an addition agent designed to lower surface tension, improve the penetrability and make for easier removal of the acid, is pumped in with a portable mudhog pump operated by gas pressure.

Common Practice

The average gas well treatment consists of 1,500 gallons of acid solution. After it is run in the hole, a gas drive is applied to stimulate the action of the acid. The actual treatment normally requires from 15 to 20 minutes. Acid has been allowed to remain in the hole varying lengths of time and, while this is dependent somewhat on the formation, it never exceeds 18 hours. After treatment, the well is allowed to blow open until the acid is exhausted and the gas is again turned into the line.

West Virginia Practices

The principal difference between acid treating in West Virginia and elsewhere is the type of equipment used. West Virginia's topography is unusually rugged, well locations are difficult of access and during much of year roads are impassable. The result is that instead of using large tank trucks for transporting the acid, Mr. Vandergrift employs a flat-bed truck on which he carries the fluid in 55-gallon drums. When it becomes impossible to transport the acid farther by truck, the drums are transferred to skids drawn by mule teams or tractors to the well. Fig. 1 shows a mule team in action and Fig. 2 shows the arrangement at a well to be treated with 3,000 gallons. The 2-inch line from the tank to the well, the pump, truck, tank and drums are shown in the latter.

Acid treating was used on oil wells before gas wells in West Virginia and has proven economically profitable on the high cost, small production properties in this state which produce from lime formations. In treating oil wells, the method used is the same as for gas wells except that the hole is filled up with oil behind the acid and this hydrostatic head replaces the gas drive used for gas wells.

One of the interesting results of treating oil wells was the discovery that many wells which had been producing from the Big Injun had been drilled through a pay formation in the Big lime. The use of acid on the lime, a pay which had been passed up, resulted in greatly increased production from some of these wells. Another result and one that is equally important is that it may be found possible to develop properties with less drilling if the wells are acid treated. It has been found that wells located 1,200 feet from a well that was treated have been favorably affected by the acid. Normally wells are spaced at 600 feet and it is believed that this distance could be doubled at least without adversely affecting ultimate recoveries. While this plan has not been tried, possibly because drilling has been curtailed as a result of the low price of oil, its possibilities in view of the comparative high cost of drilling in this state are being considered seriously by several of the large oil operators.

One of the most spectacular results of a single well treatment occurred in Clay County in which seven wells in all were affected. These wells were located approximately as follows:

o o o

o o

o o

These wells are offset approximately 600 feet. The well in the upper left is the one which was treated with 1,450 gallons. One company, owning the treated well, the two below and the two to the right of it, realized a net increase of approximately 10,000 bbls. in the following 10 months. Both remaining wells, owned by another company, averaged 400 bbls. per month for some time after the treatment. The two wells in the upper right and the two in the lower right had not produced previously from the lime.

Table 2 lists the production record of three oil wells before and after treatment. All these wells are in Roane County. The time of treatment is indicated on all wells and the time of a retreatment, in which 3,000 gallons of acid were used, is indicated on one. A peculiar feature is contained in the record of No. 3 Andrew Parks which reached a peak of 31 months after treatment. At first production declined after treatment.

TABLE 2—PRODUCTION RECORD OF THREE OIL WELLS, IN BARRELS

No. 7 Lamb, Roane County

Month—	1935	1936	1937	1938
January	5	1	161	152
February	4	†214	141	140
March	4	244	163	151
April	4	238	152	152
May	5	234	152	152
June	4	184	151	151
July	4	180	152	...
August	5	180	152	...
September	4	170	157	...
October	5	175	152	...
November	4	175	152	...
December	4	170	163	...
Annual	52	2,165	1,848	*898

*Six months' total. †Treatment applied.

No. 3 Andrew Parks, Roane County

Month—	1934	1935	1936	1937	1938
January	...	13	42	42	60
February	...	12	22	36	60
March	...	13	29	42	69
April	...	13	30	42	63
May	...	14	31	42	66
June	...	12	31	44	66
July	13	5	30	44	...
August	14	†65	28	41	...
September	12	45	33	50	...
October	15	36	31	63	...
November	13	36	28	66	...
December	13	38	45	66	...
Annual	*80	302	380	578	*384

*Six months' total. †Treatment.

No. 1 John W. Epling, Roane County

Month—	1933	1934	1935	1936	1937	1938
January	15	15	204	135	104	83
February	7	‡341	108	125	*96	72
March	9	628	130	130	115	81
April	15	375	130	130	130	78
May	12	363	135	104	139	90
June	15	214	125	104	130	93
July	15	208	135	108	135	...
August	12	216	135	104	130	...
September	15	200	125	104	130	...
October	9	216	135	108	130	...
November	15	208	130	100	130	...
December	12	208	130	88	130	...
Annual	151	3,192	1,622	1,340	1,439	†497

*Retreated. †Six months' total. ‡Treatment applied.

Natural Gas Meets New Competition at Cleveland

A pressure gas holder, a comparatively new type for storing gases generated by decomposition of sewage, has been completed at the Cuyahoga Heights southerly plant of the $14,000,000 sewage disposal project of the city of Cleveland. Ohio., according to the Lincoln Electric Co.

The holder is a 57½-foot diameter arc welded sphere having a capacity of 200,000 feet of free gas at 29 pounds operating pressure. The design and method of construction made it possible to obtain the required capacity in a structure which is considerably smaller than would be the case with other types of holders. The smaller size provides savings, not only in initial cost, but also in operating costs, since there are no moving parts. Maintenance costs are expected to be negligible.

The purpose of the holder is to store gas produced in excess of normal consumption and to pay out deficiencies as required. The sphere floats on the line in much the same manner as an elevated tank in a water system. The surplus gas in the sphere will be compressed and paid out into the service lines as needed for laboratory, boilers and two 400-horsepower gas engines. In normal operation of the plant, with the sphere off the line, gas is generated at a pressure of approximately 20 inches of water which is sufficient to supply the engines and boilers. Generation of gas is by natural decomposition, accelerated by controlled digestive elements.

Revise Map of Coal Basin Area Of Illinois, Indiana and Kentucky

A newly revised map of the Coal Basin area, including all of southern Illinois, southwestern Indiana and northwestern Kentucky, has just been issued by George F. Kelly, 223 Kennedy Building, Tulsa. It shows all oil and gas producing areas and shows sections and land surveys, oil and gas wells, dry holes and dry hole depths in Illinois and Indiana.

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Automobile Topics (w) 27 40
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Boot & Shoe Recorder 117 148
Bus
Coal
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Farm Implement News §55 60
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Journal
Southern Automotive Journal 28 48
Southern Hardware 27 32
Sporting Goods Journal 9 14
Total 1,307 1,775
Class Group
Advertising Age (w) 62 87
American Funeral Director 39 61
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Hospital Management †13 †18
Hotel Management 76 83
Modern Hospital 56 80
Modern Medicine 49 50
Nation's Schools 21 26
Oral Hygiene 86 98
Traffic World (w) §†68 ‡84
Total 509 634
*Includes special issue. †Includes classified advertising. §Last issue estimated. ‡Five issues. ¶Three issues.
Business Paper
Advertising in Doldrums
• DISPLAY advertising in industrial publications hit a new low for the year when July issues showed a decrease of 23.19 per cent in volume below July issues a year ago. For the seven months to date, the sixty-nine papers in the group reporting registered a 11.62 per cent drop from the same period last year.
Twenty-one trade papers were off 26.37 per cent in display business compared with July, 1937, issues. For the comparable seven-month period the decrease amounted to 15.72 per cent.
Advertising volume in ten class papers was off 19.72 per cent in July, 1938, issues against those of a year ago. The loss in display pages for the first seven months compared with the period a year ago reached 14.89 per cent.
INDUSTRIAL MARKETING, August, 1938
44

This billion dollar materials market of the oil industry has shown greater activity, as reflected by advertising space in the various trade papers, than any other single industry during the last seven months' period.

During July The Oil and Gas Journal carried more advertising space than any other industrial paper. While advertising in general among the twenty-one leading trade papers serving all industries was off 15.72 per cent, The Oil and Gas Journal for this seven-month period showed practically no loss and carried more advertising than any other oil publication.

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Is It Profitable to Recondition Old Stripper Wells?

By L. G. E. BIGNELL

Owners of the thousands of stripper wells are faced with many problems. Modern petroleum engineering can solve most of them but the economic restrictions limit the application of the newer methods. Frequently it is a better paying business to continue to pump from one-half to 2 bbls. of oil per day from an old well than to spend money trying to increase its rate of production only to find the money spent will take a long time to recover. If the investment cannot be paid back in a reasonably short time it has the same effect as shutting down wells and cutting off income entirely.

It has been established that old wells will continue to produce their quota of oil for a long period without repair. Even if water breaks in it is possible to handle it without much additional cost and certainly at a lesser outlay than to make a thorough repair of the well. The operator of old properties has adjusted himself to the income he can secure from his wells and while he may have some surplus at the end of the year he feels it is better to hold it in reserve for other investment or for an emergency which may require the outlay of additional capital on his old properties.

Cost Versus Return

This in general explains why old wells are not cleaned out more frequently and why equipment is allowed to operate when it might be repaired or replaced. The investment is always considered in barrels of oil and when a property is making from 25 to 150 bbls. of oil per day under its present operating conditions and this income is allowing the owner to set aside some profit after paying expenses the stripper operator considers it the best policy to allow matters to rock along as they are without paying too much attention to new production methods. Money has to be spent constantly for material absolutely needed and when an operator has 150 to 200 bbls. per day production from wells making less than 2 bbls. per day each his problem is divided among 75 or 100 wells and he has plenty to think about to keep them all operating and showing some profit.

This old production comes from sands from 400 to 1,200 feet deep. Most of these wells were drilled from 20 to 30 years ago and usually with cable tools. The driller's logs are not very accurate and this presents one of the first problems for the operator to consider when he is thinking about making repairs. Without knowing the exact depth at which the casing is bottomed, nor the kind of material upon which the shoe is set it is rather hard to make accurate calculations for repair jobs. It may be known that the casing is leaking and too much water is running into the hole and it may be admitted the best thing to do would be to run a new string of casing inside of the old string but the cost of this new pipe is prohibitive when the rate of recovery from the well is considered.

Even if the well log is reasonably accurate it is not going to help a lot because it will take several days to clean out the debris at the bottom of the hole. This is usually done by moving in a light cable tool rig and drilling and bailing until the hole is clean. This costs about $20 per day and in 10 days time, a reasonably short time for such a job, the cost will amount to $200 or expressed in terms of net oil about 230 bbls. If the well will make 5 bbls. per day after cleaning out it will still require over 40 days to pay out without considering the lifting cost and other general expenses. When it is considered that it may cost from 25 to 50 cents per barrel to produce this oil it will be seen that the payout time will be greatly extended. During this period the owner's income is materially reduced and he would have been better off if he had continued to pump the 1 or 2 bbls. per day the well would make without repairs.

This example covers only the problem of cleaning out debris from the bottom of the hole and exposing the face of the sand. Suppose the sand is 20 to 40 feet thick. The hole is filled up to within 5 or 10 feet of the casing shoe but the well still makes its small quota of oil. If it is assumed a clean-out job will result in the exposing of more sand face and this in turn will result in more oil flowing into the hole it might be well to consider the facts as they have been developed by experienced stripper operators.

It has been found the material in the bottom of the hole will contain almost anything from lost working barrels to iron rust from the casing and tubing. The face of the sand will be found to be heavily coated with paraffin or basic sediment accumulated over a long period of time and very difficult to remove. The iron oxide and iron pyrites in some sands aided by air introduced for repressuring will combine to form products of sulfur and this is a fairly good cementing material.

With this condition of the sand face after the debris has been removed it is not possible for the well to produce any more oil than it has been producing from the upper open part of the formation. So the clean-out job costing about $20 per day minimum and ranging from 10 to 30 days to complete will prove a loss.

Use of Solvents

If it is decided to try to clean the face of the sand and remove the accumulation it will require the outlay of more money. Suppose it is decided to use some solvent to try to remove the paraffin and sediment from the face of the sand. This will cost money and the chances are the results will not be all that had been hoped for in the way of increasing production. The plugging of the pores of the sand extends some distance back from the face of the hole.

This will suggest the reaming of the hole or the redrilling of the sand face using an offset bit. The hole can be enlarged by several mechanical means but it is going to cost a lot more money both for the enlargement of the hole and later for the removal of the cuttings. So it is possible to spend another month at $20 per day or more and that would mean $500 or $600 expense, which again expressed in terms of oil would mean the results of this work would have to produce materially additional oil to make it worth while.

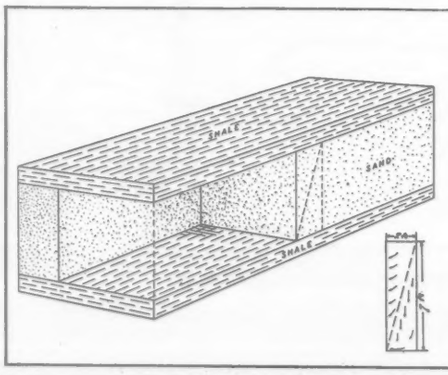
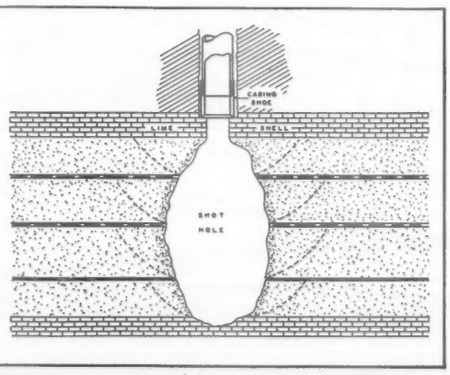


Diagram of oil mine showing drainage gradient in sand at face of drift



Cleaned shot hole with plugged zone in sand face and drainage zone gradients indicated

To drill wells with cable tools in these old fields costs from 75 cents to $1 per foot. Based on a dollar per foot for drilling it would not cost any more to drill a new hole than it would to try to clean out the old one. If the old well is abandoned the casing can be salvaged and rerun so the new well will not cost much, if any, more than trying to clean out the old one if the depth to the producing sand is 700 feet or less. For wells more than 700 feet deep it may pay to clean them out but it is hardly probable they will ever make as good a producer as a new well drilled a short distance away.

In water-flooding projects it is regular practice to drill input and producing wells upon regular pattern regardless of the location of the old wells. It has been found that many of these new wells will make from 15 to 30 bbls. of oil per day. They may not be produced because they were drilled for water input wells but the fact that they can make oil wells is interesting and indicates the

relative profit to be made by drilling new wells as compared with trying to clean out old ones.

When a lease is redrilled for water-flooding it has been found the old casing and other equipment salvaged is worth about what it costs to recover it.

The fact that there still remains in the ground an appreciable volume of recoverable oil in these old fields as proven by the results of repressuring presents a problem for the petroleum engineer to find economic ways by which the old wells can be cleaned out and the sand face renewed. The conditions under which the wells have been operated have caused sediment to accumulate on the face and back in the pores of the sand but the fact that new wells drilled a few feet away from the old wells come in as good producers indicates the sand pores are not plugged for a great distance back from the face.

In the oil mining operations in Pechelbronn, France, it has been observed that a new face opened in a drift in the mine will seep oil for a time but gradually fail to produce starting from the top of the strata and extending downward until only a small trickle will escape from the base of the sand. Under mining conditions it is possible to remove the face of the sand in varying thicknesses to expose fresh surfaces. It has been found that in a sand body about 7 feet thick the zone drained is about 24 inches deep. When this 2-foot layer of sand is removed the oil will again begin to flow from the fresh sand face. By this seepage method from 32 to 36 per cent of the total volume of the original oil in the producing formation is recovered. About 16 to 17 per cent is recovered by drilled holes and the remainder after seepage ceases is recovered by washing the sand with an overall loss of from 4 to 6 per cent of the original volume.

Where the sand is interspaced with shale partings the effective thickness of the drainage zone is reduced. The sand between any two shale bodies will determine the pressure gradient or the angle of repose above which some of the oil will flow to the sand face by gravity. The oil left behind in the pores of the sand acts as a barrier against free escape of oil from further back in the sand from the well bore. If the diameter of the well bore could be economically enlarged new oil would flow into the hole. The economic problem is to determine whether it is cheaper to drill a new well or to try to recondition an old one and up to this time most stripper operators have decided that trying to recondition old wells does not pay.

MAINTENANCE OF MUD

(Continued from Page 63)

increase in alkalinity. Ordinary clays and native formations form muds that are slightly alkaline, a pH of approximately 8.5. In the range of pH of seven there is danger of the mud losing its stability and the colloids flocculating.

Treatment of Muds

To correct gel strength. There are three procedures for reducing the gel strength. One is to add water to reduce the amount of colloid per unit volume; another is to add a flocculating agent and flocculate, or precipitate, the colloids creating the gel. The third is by the addition of certain chemicals. The first method is undesirable because of the consequent reduction in weight and the second is undesirable because of the lack of ability to control the flocculating action.

To correct the weight. Under most conditions the mud made with native clay will have sufficient weight to prevent a blowout. One barrel of drilling fluid composed of natural clay and water, weighing 10 pounds per gallon, containing just native matter, has approximately 0.15 bbls. of clay and 0.85 bbls. of water in it. The specific gravity of most clays is approximately 2.5.

As solid matter is added to the mud the weight increases, but the subsequent increase in viscosity will prohibit the use of too much low specific gravity material. To get around this the weight is generally built up to 10 or 10.5 pounds per gallon with native clay and the additional weight gained with pulverized barytes or some similar high specific gravity material.

To correct the viscosity. A high viscosity can be attributed to two factors, first a high solid content and second to chemical content. To reduce the solid content would reduce the unit weight. It is desirable to replace the low specific gravity particles, for example sand, with a weight material in order to reduce the per cent of volume occupied by solids.

A viscosity due to chemicals must be reduced by chemicals. The following procedure has been found to be efficient and economical in determining the proper treatment. The various chemical mixtures are made up in the laboratory in quart jars. This size is convenient to carry in a car. Suggested ratios of chemicals are:

	Gallons of water
10 gallons Stabilite No. 4 to	40
10 pounds Stabilite No. 6 to	50
20 pounds Stabilite No. 6 to	50
20 pounds Caustic to	50
20 pounds Quebracho to	50
10 gallons Chemical Z to	40
10 pounds Meptol to	50
10 pounds Gallic Acid to	50
10 pounds Disodium Phosphate to	50

Combinations of these should also be tried.

To ascertain the proper chemical the following

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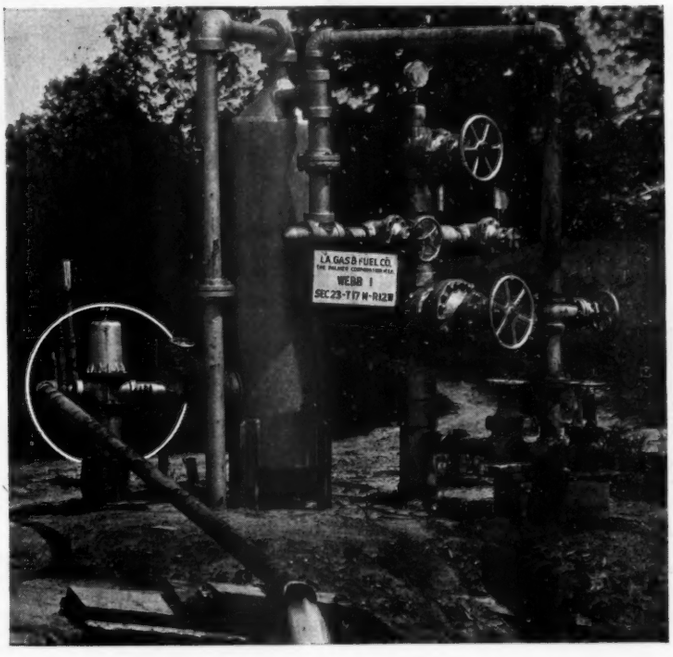

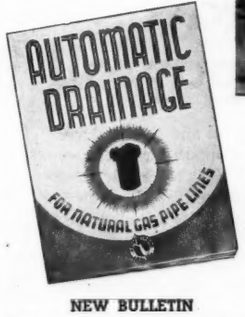

NEW BULLETIN

Copies of this bulletin will be sent to any reader free on request. If you are interested in steam trap applications, ask for a copy of "The Armstrong Steam Trap Book."

THE use of Armstrong Traps for draining gas well separators is only one of several interesting applications described in the new bulletin, "Automatic Drainage for Natural Gas Pipe Lines." The above picture shows a No. 235 compound trap used for this service in Louisiana. This trap is recommended for gas pressures up to 250 lbs. per sq. in. At 250 lbs., it has a continuous discharge capacity of 73,500 lbs. of water per hour. Other standard sizes are available for higher or lower pressures and for larger or smaller capacities. Complete information on request. ARMSTRONG MACHINE WORKS, 868 Maple St., Three Rivers, Mich.

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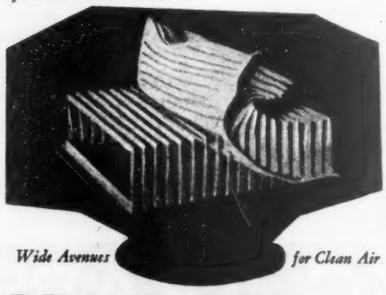

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Accepted and listed by those manufacturers controlling 96% of air compressor and stationary engine sales. Write Coppus Engineering Corp., 354 Park Ave., Worcester, Mass., for Bulletin F-310-3. Branches in oil centers, representatives in principal cities — listed in THOMAS' REGISTER

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procedure is suggested: Pour 1,000 cc. of mud back and forth between a 1,000 cc. cup and funnel viscosimeter about five times to insure proper mixing. Then note the time required for the 1,000 cc. to flow out of the viscosimeter. Add 10 cc. of the chemical mixture to the mud and repeat the test. A difference in time will indicate effectiveness of the chemical. To determine the effect of dilution by the 10 cc. a test should be made with water alone.

To correct the stability. A low pH may be corrected by the addition of caustic soda or some salt that will yield a high pH on hydrolysis. Likewise a high pH may be corrected by the addition of some salt that will yield a low pH on hydrolysis. A shortage of colloidal content, indicated by free water on a settling test, can be corrected by the addition of a bentonitic clay such as Aquagel or Jelox.

General. Sometimes formations are encountered that heat the mud up to unusually high temperatures. This can be adjusted by installing a mud spray or some artificial cooling system. A good shale shaker should always be used to keep the cuttings out of the mud.

Mechanical Treatment

The gas entrained in mud can often be released by jetting the surface of the pit with a mud gun. This mud gun is an arrangement of a jet and swivel whereby a strong mud jet can be turned in any direction. Such action causes the gel to break up and keeps the weighting material from settling out while in the pits.

By installing a few baffles in the ditch some of the gas will have a better chance to escape as a result of the agitation. Some operators install a jet over the ditch just past the flow-line discharge. This arrangement will also break up the gel and help reduce the viscosity.

It is sometimes possible to circulate the mud for a few hours in the hole and pump off a gas head. This procedure should be resorted to before weighting a mud when it is thought that a small gas pocket has been encountered.

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Tuning Automobile Engines Is Essential for Economy

Tuning up automobile motors to obtain maximum efficiency is as important as tuning up a violin or piano to realize a rich, full bodied tone, according to engineers who are directing the Ethyl Gasoline Corp.'s nationwide system of motor clinics.

A startling high percentage of cars traveling the roads of the United States are either badly in need of tuning up or are tuned down with resulting loss of top engine performance, clinic studies show.

If American motorists had their motors tuned up periodically to "peak tone" just as musicians do in preparing their instruments for a concert, almost 90 per cent would be rewarded with peak power from their engines at no increased cost, the engineers declare.

Lack of knowledge of the true relationship between fuels and motor tune-up is blamed by the clinic engineers for poor motor performance which car owners often impute to the automobile manufacturer. Tuning down to avoid knocking is the mechanical reason for sluggish motors, it is found.

Inability to develop maximum power has been traced largely to the "compromise position" at which motor timing is set by mechanics and au-

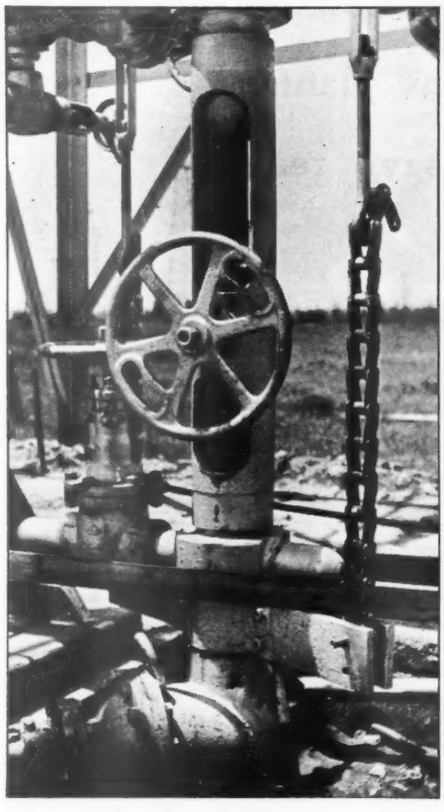
tomobile service men. As a result of this "compromise" timing, it is explained, automobiles using regular gasoline will operate with reasonable freedom from knock. The "compromise" setting is accomplished in the distributor which controls the spark to the combustion chamber of the engine.

Laboratory tests to demonstrate this principle to mechanics, service managers, automobile salesmen and gasoline station operators are being carried out at the Ethyl clinics. Using a standard make automobile mounted on a dynamometer—a machine which duplicates extreme driving conditions—engineers feed the motor low grade, regular, and high-octane fuels to obtain three grades of performance.

Old Drilling Chain Provides Christmas Tree Flexibility

Short lengths of drilling chain are used effectively to replace the more rigid tie-down bolt formerly employed on an East Texas christmas tree when the original equipment interfered with the installation of reins for pumping equipment.

Erection of a central power and rod-line jacks at each of the wells dictated a drive at one well

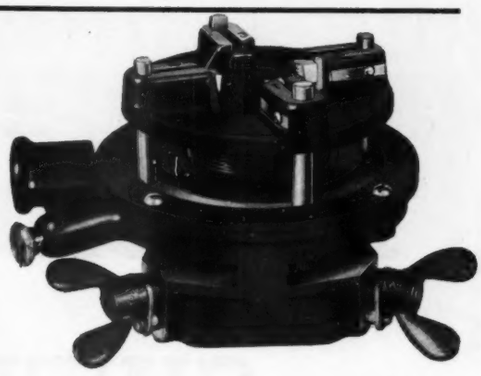


Short lengths of drilling chain provide extension for the usual hold-down bolts on this well-head tie-up

which brought the reins directly into conflict with the hold-down bolts which were still required during the flowing life of the well; seemingly necessitating a shifting of the entire well head set-up, or the provision of other than standard connection to the jack.

Removal of the bolts and their replacing with shorter bolts and sections of drilling chain long enough to fill in for the bolt length removed provided a flexible connection which was amply strong in tension, yet which would permit a slight shifting of the lower clamp to accommodate the pumping equipment.

TO OBTAIN GOOD THREADS ON 1" TO 2" PIPE—



—may we suggest you try a "TOLEDO" No. 1BR Ratchet Threader.

No bushings. Three broad-face chuck jaws, with size marked guide bars, operated by large wing-head set screws makes it easy to center on the pipe. Minimum number of moving parts—less wear.

A separate set of dies for each size—2 inch made from high speed steel. Easy operating receding die principle. Finest materials and workmanship.

Sold by leading Oil Well Supply Dealers.

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PERFECTED THREADERS

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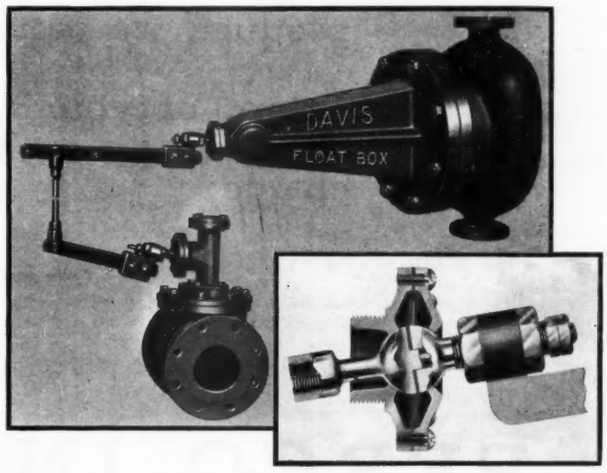
with "PACKLESS" Float Boxes



IF you want to end the nuisance . . . expense . . . and possible danger of stuffing boxes that leak, standardize on Davis' new line of float boxes and lever operated valves featuring the patented DAVIS "DIA-BALL" PACKLESS HEADS!

The unit pictured above consists of a No. 161 D Float Box actuating a No. 66 B Packless Balanced Valve. This inset shows a cross-section of the "DIA-BALL" construction used in both the float box and the control valve.

Note that there is no offset between float arm and lever. Power is transmitted from float to valve disc in same vertical plane. This makes for highest efficiency and accuracy of control.

The diaphragm sealed ball-joint eliminates leakage, minimizes friction, and stops maintenance worries. Ask for detailed information about this exclusive Davis feature which is now available in a complete line of float boxes and control valves for oil refinery and natural gasoline plant service.

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DAVIS REGULATOR COMPANY
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If you send us samples of your unsweetened product, we can estimate very closely the extent of your savinqs. And there is no charge

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LICENSING REPRESENTATIVE

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Significance of Laboratory Tests of Motor Fuels

Would you kindly give us the meaning of the several tests that are applied to motor gasoline? Do the authorities agree on any specific group of tests to determine quality?—E. S. Y.

When judging the quality of motor gasoline it is the combination found after the application of a series of standard tests that should be relied upon for a conclusion. There was an article on the subject of the significance of the laboratory tests of motor fuels in The Oil and Gas Journal, December 24, 1936, page 34, by A. W. Trusty. The conclusions stated there are those accepted by the chemists and technologists of the petroleum industry. The meaning of the results of these are summarized here:

Gravity is of little significance of performance quality. It is useful for calculating weight and for market grading.

Copper strip test reveals presence of any corrosive substance, such as sulfur or hydrogen sulfide, by darkening of the metal.

Doctor test is relied upon to show the presence of mercaptans or hydrogen sulfide by an orange or black precipitate. A good odor is usually assured by a negative result.

Total sulfur at a maximum of 0.1 per cent is certainly a safe limit to prevent corrosion. Some countries use gasoline containing 0.3 per cent total sulfur.

Gum deposits should be avoided. The maximum 10 milligrams permissible is satisfactory for preformed gum. Potential gum limitation is based on the induction period of 240 minutes.

Copper dish test is considered a good qualitative test for gum. If negative, or nearly so, the quality is good.

Octane number is related to the compression ratio and power output of the engine. Average compression ratio in 1925 was 4.4 and 70 hp., but in 1937 the automobile engine averaged 6.25 compression ratio and 120 hp.

This table illustrates the effect in an aero-engine.

OCTANE NUMBER AND FUEL CONSUMPTION

Octane Number	Power output hp.	Fuel used gals./hr. at 400 hp.
73	600	28
84	650	25
87	670	23
100	760	20

Most of the gasolines marketed in the United States exceed 70 in octane rating.

Volatility, or rate of evaporation, is indicated by distillation test data. These permit conclusions covering starting quality, engine acceleration, power output and mileage, vapor lock, and crankcase dilution. Brown's starting formula is: 10 per cent evaporated temperature should be less than 1.25 (100 + engine temperature). At 80° F. the maximum 10 per cent point is 225° F.

The dewpoint of a 12 to 1 air-fuel mixture has this relation to the 90 per cent temperature: Dewpoint = 5/7 (90 per cent point — 186). U. S. motor gasoline 90 per cent at 392° F. will have a dewpoint of 147° F. Meaning that the intake manifold must be heated to 147° F. for vaporization. The practical range is 110° F. for easy starting and ability to keep running. The vapor locking temperature as related to vapor pressure is indicated in the table.

VAPOR LOCK

Vapor pressure lbs. at 100° F.	Vapor lock temp. F.
6	150
8	133
10	119
12	108
14	99
16	91

The 10 per cent point is an indication of the starting quality; the 35 per cent point of the warming-up period; the 65 per cent point of general performance and the 90 per cent point is an indication of crankcase dilution tendency.

The 10, 50, and 90 per cent point by distillation will in most instances furnish sufficient information as to the volatile qualities of a motor gasoline.

Quality of Gasoline In England

How does the quality of the gasoline sold in England compare with that of the United States?—G. L. B.

A survey of the quality of the gasoline sold on the British market was reported in the Petroleum Times, November 28, 1936, page 675. This survey was based on a set of samples collected in June and another in November. There were some differences but the June samples may be considered as typical.

BRITISH GASOLINES

Four National Brands Ethyl

Gravity, A.P.I.	Initial B.P., °F.	10 per cent off at
61 to 59.9	91.4 to 98.6	136 to 140
Per cent off at 212° F.	**Endpoint**	**Octane No. (C.F.R.)**
30 to 40	358 to 374	79 to 81

Six Regular Grades

Gravity, A.P.I.	Initial B.P., °F.	10 per cent off at
58 to 60	86 to 100	133 to 144
Per cent off at 212° F.	**Endpoint**	**Octane No. (C.F.R.)**
38 to 40	372 to 386	73+ to 80+

The quality of these gasolines correspond very well with that of the domestic product, probably being influenced by export practices.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Chlorosulfonic Acid

Use—Deodorizing kerosene, emulsifying agent for lubricating oils.

Form—Oily fuming corrosive brown liquid.

Formula—$HClOSO_2$.

Molecular weight—116.5.

Specific gravity—1.784.

Boiling point—180° F.

Solubility—Water.

LIMITATIONS

Purity, min., per cent 93

Octane Number of Natural Gasoline Varies With Source

What is the octane number of natural gasoline? Is the natural gasoline produced in different fields known to vary in octane number?—S. P. R.

The octane number of natural gasoline is a property that varies with the source or nature of the natural gas. The product made in East Texas field has an exceptionally high octane number. Octane rating appears to be closely related to vapor pressure. As a generalization, it may be said that very high octane values have been found for natural gasolines having exceptionally high Reid vapor pressures. The octane numbers of natural gasoline have been reported ranging from 55 at a vapor pressure of 3.5 pounds to 80 octane number at a vapor pressure of 30 pounds.

The important hydrocarbons of natural gasoline are pentane, isopentane, butane, and isobutane. Alden has reported the octane values of these as indicated in the table.

OCTANE VALUE OF NATURAL GASOLINE HYDROCARBONS

Hydrocarbon—	Oct. No.
Normal pentane	65
Isopentane	90
Normal butane	91
Isobutane	99

It is the concentration of these that directly influences the octane rating of the natural gasoline. The first operation is the separation of the hydrocarbons or groups of hydrocarbons by fractional distillation. After the selected fraction has been obtained, some of the desirable components of antiknock value are often lost in the treating stage because the chemicals applied for removal of objectionable substances such as sulfur also act to extract antiknock components.

The greatest volume of natural gasoline marketed is the 26-70 grade. This grade may usually run from 56 to 66 in octane value, with some testing above 70.

The problem encountered when blending natural gasoline with refinery gasoline for the improvement in antiknock rating, is that other properties of importance in specifications inherent in natural gasoline often cause difficulties if octane value alone is considered. The maximum quantity of an 80-octane number would be limited to those quantities that would not produce a blend with a vapor pressure above the commercial standards and would not produce a product too volatile, as indicated by the distillation test.

When preparing specifications covering octane value it is advisable to recognize the fact that determinations of octane number, when made by different operators and different methods, may vary from two to four numbers. If the stipulation is very close, lacking reasonable tolerance, it may result in a controversy.

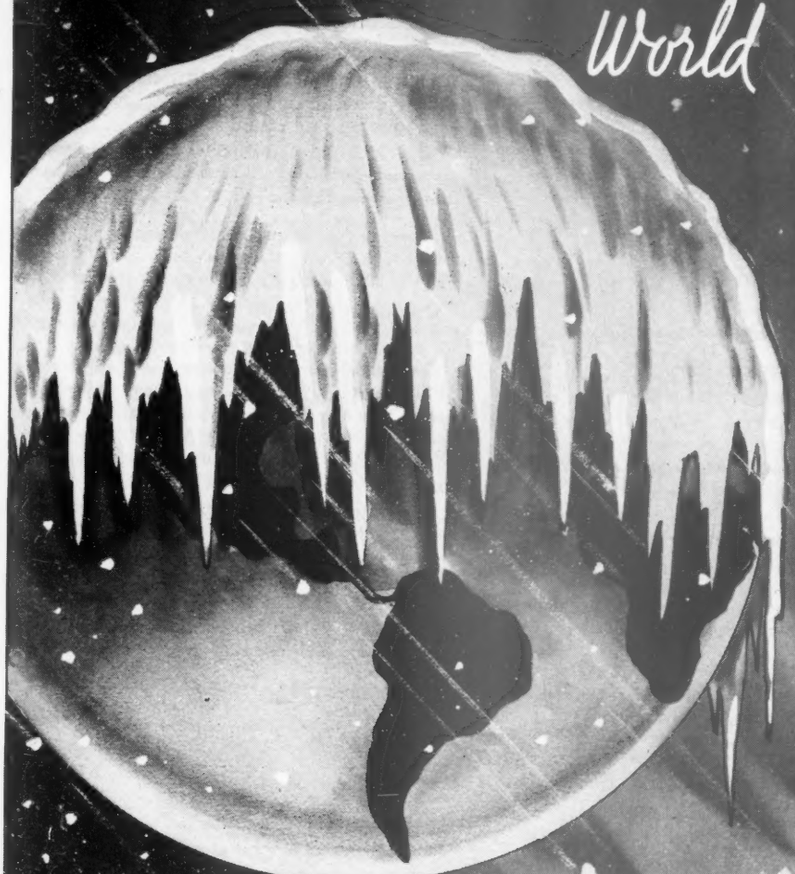
Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be enclosed.

WHEN WINTER COMES

World Refiners use more

WARREN'S STABILIZED NATURAL GASOLINE

for Blending



WARREN PETROLEUM CORPORATION
JUST NATURAL GASOLINE
Tulsa, Oklahoma

When winter comes—as it always does—motorized traffic is confronted with more and greater difficulties. Temperatures are low—motors are cold and stiff—hard to start. Highways are rough and heavy—harder to negotiate. Driving conditions are more hazardous—require that certainty of instant starting, quick getaway and extra power. Then, more than ever, does Warren's Stabilized Natural Gasoline insure to refiners and motorists alike that volatility, high octane and low front end so essential to the very best in motor fuel.

Warren's mass production and adequate storage and shipping facilities insure refiners at home and abroad a constant supply and consistent quality of Stabilized Natural Gasoline.

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Export Terminals, Corpus Christi, Port Arthur and Norsworthy, Houston, Texas; Marcus Hook, Pa.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

How Did Salt Get Into Oil-Field Waters and Into the Ocean?

By what sort of process did salt water come into existence? I mean not only salt water of the oil field, but the salt water of the ocean. I suppose there is a close relationship between the two.—D. S. F.

Your question may be answered by the following explanation offered by J. Terry Duce, of the Texas Co.:

"Geologists believe almost all brines may be traced back to sea water. It is probable, however, that in the beginning of geological history the ocean had very little salt in it. As rain water dissolved some of the minerals in the earth's rock, they were carried to the sea by rivers and smaller streams. Gradually this mineral matter was concentrated to form the present sea water. Geologists and chemists find that rivers today carry almost 2,000,000,000 tons of mineral matter in solution down to the sea every year. The sun evaporates the sea water and carries it back to the land again in clouds where it falls as rain and again picks up its load of mineral salts. Thus the earth is really being slowly dissolved and carried down to the sea.

"Many of the substances which can exist in the very weak solutions of river water are precipitated out by the time it is concentrated to the strength of sea water, and the animals and plants that live in the sea help in this process. Calcium forms the bones of fish and the sea shells and the skeletons of corals. Silica forms the skeletons of some sponges and the framework of the free-swimming plants—diatoms—while iron is an important constituent of the minute plants belonging to the algae.

"From these processes have been formed the limestones and iron ores of today. However, the more soluble substances remained behind in solution. Only 2,200 parts in every 1,000,000 parts of river water are solids, while in sea water 35,000 parts per million are solids. Sea water is therefore about 17 times as concentrated as river water. Sea water is really formed by the natural evaporation of river water.

"Now, let us look at the history of our oil field brine. First we must go back to geologically Cambrian times, taking eastern Oklahoma as an example. The region was a fairly level plain, whose surface was principally granite rock. At some time it was invaded by a sea, and a thin sandstone—the Reagan sandstone—was laid down on top of the granite. This was followed by a deepening of the sea and the deposition of a very thick limestone formation—the Arbuckle. On top of this came the Simpson formation, alternating limestones, sandstones and shales.

"The the sea withdrew and, in the Tulsa area, these formations were gradually worn down. At Tulsa the erosion almost reached the limestone. In some districts in northern Oklahoma the Arbuckle was deeply eroded.

"Let us imagine ourselves back in the Tulsa area in the late Devonian time. It was probably a low, rolling plains territory, with the beginning of forests. The monarchs of the land were the insects, who were just beginning to appear. Under this plain surface the ground-waters were busy on the limestone and dissolved much of the more soluble parts of it, leaving it highly porous.

"Time passed, and in late Devonian or early Mississippian time the sea again invaded the area, and the sea water must have filled all the pores in the limestone, penetrating wherever erosion had reached. Finally in this sea was deposited a black mud, rich in organic matter, that now forms the Chattanooga shales, and which effectually sealed into the cavernous Arbuckle and the overlying Simpson the salt water circulating in them. On top of that, later seas laid down more sediments, and the whole country was gently folded."

Crude Production Per Acre From Sands of Varying Thickness

Is there any method which can be called fairly accurate of ascertaining the production of oil that may be recovered per acre from sands of different thickness? I have seen a statement that the average production per acre is about 10,000 bbls., but this is supposed to include sands of all thicknesses. It seems to me it should be possible to estimate the production of a pool with some degree of accuracy where you know the thickness of the producing sand.—N. H. D.

Many statements have been made about average recovery and average saturation of formations containing oil that have been based upon many assumed conditions later proven to be wrong.

In the past there was little occasion for coring formations as the wells were completed, and the operators' first concern was to finish the well in the best possible mechanical condition and get as much oil as possible regardless of the character of the formation from which it was produced.

In more recent years when it has been necessary to make detailed studies of formations to determine physical conditions upon which data it was possible to formulate future production methods it has been found that many of the guesses were far from the facts.

The statement that the average production per acre is about 10,000 bbls. may be fairly accurate if the total amount of oil produced is divided by the total number of productive acres. But that sort of statement does not mean very much because it avails a producer little to be told that the average production is 10,000 bbls. per acre when he already has recovered perhaps 10 times that amount from his property or when he has recovered only one-tenth of this quantity. And both quantities have been produced from similar formations.

Coring devices that can get good cores in either cable tool, rotary or cored holes, are now available to the industry. There is no excuse for finishing a well blind. The cores can be taken to laboratories where definite data can be obtained regarding them and close estimates of their original content and the probable recovery can be ascertained. This costs money, of course, and many operators go on the theory that they are lucky and will get their share of the oil anyway but the more modern operator is not satisfied with such assumptions and is having adopted in several fields. Such core data is also of value in solving production problems which may later arise.

Does the Gas-Oil Ratio of Wells Change With the Field's Age?

Does the gas-oil ratio of a well change as the field moves from its flush stage, with the production steadily declining? If these is a difference is it an increase or a decrease? As the development of the field proceeds the rock pressure goes down of course, but the question in my mind is concerning the quantity of gas that will be produced with each barrel of oil. Can you tell me whether this remains stationary?—A. F. O.

This question could provoke discussion because its answer depends upon the mode of operation followed in producing the oil and gas from the particular field in question. Some engineers assert that gas-oil ratio is determined by the type of flow string selected and the method of operation. Others seem to believe that under natural conditions the proportion of gas to oil will increase with the life of the well and this is desirable in order to obtain the maximum production from the well.

Regardless of which theory is accepted it has been proven in recent years that there is a critical pressure in every formation below which the gas that has been in solution in the oil will tend to leave the oil or come out of solution. As it leaves the oil the gas-oil ratio of the remaining oil is decreased, and the oil left behind is thicker and more difficult to move through the formation.

Instruments now available determine subsurface pressures in any wells, also obtain bottom-hole samples of the oil and gas. Coring can be carried on as the well is drilled into the producing formation and the cores studied in a laboratory. After this thas been done the production man has available the necessary samples to determine the critical pressure of the gas-oil mixture as it exists in the formation, the pressure at which the gas leaves the oil and therefore the formation pressure at which the well should be produced.

If the well is produced then with practically no drop in formation pressure the gas-oil ratio will remain practically constant. The energy of the compressed gas within the formation will be fully utilized in driving the oil into the bottom of the hole. Mechanical means can be supplied to lift the fluid from the bottom of the hole to the surface and should be employed if this will reduce the gas-oil ratio below what it would be if formation gas alone were used to deliver the fluid to the surface.

There are no mechanical problems difficult to overcome in providing means for lifting the fluid from the bottom of the well to the surface, but when man attempts to repressure or reproduce underground conditions as they were originally before the reservoirs were tapped he is undertaking a difficult problem and one that is costly.

In the past the operator's object has always been to get the greatest amount of oil in the shortest possible time. That may be the best way to pay off capital investments, but it is the poorest way to conserve a limited natural resource.

In answer to the last part of inquiry it is recommended by engineers that every effort be made to maintain a constant gas-oil ratio during the life of the field and this practice has been adopted in several fields.

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Salvaging rusted bolts in large railway shop

The "RAPIDUCTION" Bolt Threader is designed and engineered from the base up to give you the best performance possible on a wide variety of work. Built in two sizes, 3/8" to 1½" and ½" to 2¼", in both single and double spindle models, the "RAPIDUCTION" handles not only standard jobs but, because vise and carriage are free from obstructions, is adaptable to the application of special fixtures for holding unusual jobs of many kinds.

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OSTER THREADING EQUIPMENT WILLIAMS

FIELD OPERATIONS

Summarizing the Week's Developments

KANSAS—The Schroeder pool in Ellsworth County and the Latta pool in Sumner County were extended. A wildcat in Section 13-24-14w, Stafford County, showed oil and gas in Lansing lime but was being deepened. Two new Arbuckle lime producers in the revived Hittle pool, Cowley County, were near completion, both indicating large production. A pool opener was completed in Stafford County, 1½ miles southwest of the Snider pool. A 4,111-bbl. well was completed in the Zenith pool, Stafford County, and the South Ainsworth pool, Barton County, was extended three-fourths mile eastward.

OKLAHOMA—A well estimated good for 2,400 bbls. daily was near completion in the Frederick pool, Tillman County, making it the field's largest producer. Wilzetta pool, Lincoln County, was extended one-half mile southward. A new pool was opened south of Britton, Oklahoma County. A pool opener was completed in Section 16-28-1w, Kay County.

TEXAS—An important outpost to the Bennett pool in Yoakum County was a failure, but a new gas field appeared probable in Schleicher County. The Deep Rock pool in Andrews County was extended 1½ miles. A shallow producing area was opened in Young County. Wildcats in Frio, Atascosa, Bee and Jim Wells counties in Southwest Texas look promising. An 8,500-foot test will be drilled on Mustang Island, due east of Corpus Christi. The McCampbell field in Aransas and San Patricio counties was extended. The Fairbanks field in Harris County, Gulf Coast, was defined in two directions. A second test on the McFaddin Beach salt dome offshore from Jefferson County was dry and abandoned. In North Texas, K.M.A. is promised several extensions by wildcat and near-wildcat tests. A new wildcat seeking Glen Rose production is started in Titus County.

LA-ARK-TEX—In Coastal Louisiana the Bancroft distillate pool in Beauregard Parish is now also an oil field, a 450-bbl. well having been completed last week. Another 11,000-foot distillate well was completed southeast of the Lirette pool in Terrebonne Parish. A new distillate pay was opened in St. Charles Parish. North Louisiana and Arkansas experienced a somewhat uneventful week.

MICHIGAN—Wildcats, one in Van Buren and the other in Allegan County, southwestern Michigan, opened pools with 700-bbl. wells; an outside well in Isabella County started at 100 bbls. a day.

NEW MEXICO—A new producing area was opened by a small producer in Section 10-18-33, about 8 miles west and 1½ miles south of the Vacuum field, in Lea County. Three producers were completed in the Vacuum field, and an outpost three-fourths of a mile west of production was comparing favorably on structure, indicating an extension.

ILLINOIS—Even though wells are drilled and completed in Illinois in unusually quick time the completions cannot keep pace with the new work started, and at the close of the past fiscal week there were 247 wells drilling and 40 rigs up in the state. Twenty-five new oil wells were brought in.

Completions in All Fields

(Week Ending August 20, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	48	12	7	67	2,472	2,799
Ohio	5	8	3	16	607	734
Indiana	0	0	0	0	53	64
Kentucky	11	3	9	23	552	336
Illinois	25	0	8	33	846	76
Michigan	8	0	6	14	519	519
Kansas	19	1	3	23	1,042	1,616
Oklahoma	16	0	6	22	1,104	1,822
Texas:						
North Central Texas	34	2	24	60	2,007	1,810
West Texas	31	0	10	41	1,259	1,736
Texas Panhandle	6	3	0	9	383	467
East Texas	25	0	2	27	1,304	1,433
East Central Texas	4	0	3	7	229	444
East Texas Border	0	0	0	0	97	244
Gulf Coast Texas	23	0	9	32	836	971
Southwest Texas	33	2	14	49	1,286	2,096
Total Texas	156	7	62	225	7,401	9,201
North Louisiana	8	3	6	17	418	399
Gulf Coast Louisiana	10	0	4	14	303	300
Total Louisiana	18	3	10	31	721	699
Arkansas	6	0	1	7	151	97
Montana	2	0	0	2	57	131
Wyoming	0	0	0	0	103	68
Colorado	0	0	0	0	6	9
New Mexico	12	1	1	14	363	484
Utah	0	0	0	0	1	2
California	15	0	5	20	842	979
Total United States	341	35	121	497	16,840	19,636
Total previous week	361	29	126	516		
Difference	20	6	5	19		

Outstanding Fields--Highlights

(Week Ending August 20, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	61	102	12	9,302	692	13,750
Hastings	3	7	3	1,791	573	20,438
Saxet	1	8	1	116	612	32,189
East Texas	28	50	25	1,121	25,519	440,798
Ector County	14	84	11	12,074	1,205	45,650
Winkler County	7	10	5	6,791	1,683	40,450
OKLAHOMA						
St. Louis	5	27	3	556	672	20,125
Oklahoma City	6	7	2	1,525	1,090	123,250
KANSAS						
Barton County	4	18	4	872	347	11,745
Stafford County	2	15	4	1,098	157	4,315
Rice County	5	17	1	444	1,188	28,870
Russell County	3	19	5	833	1,116	26,030
NEW MEXICO						
Lea County	16	78	11	1,819	1,822	98,990
LA-ARK-TEX						
Rodessa, La-Ark-Tex	2	13	0	0	1,020	72,175
Cotton Valley (deep)	3	9	1	40	85	10,100
Lisbon, La.	4	11	2	434	256	10,615
Schuler, Ark.	2	12	3	1,858	81	22,395
MICHIGAN						
Overisel	3	13	4	2,950	12	2,600
ILLINOIS						
Central Illinois	40	247	25	8,324	794	48,109
CALIFORNIA						
Wilmington	6	22	4	9,881	540	97,250
KENTUCKY						
Birk City	6	24	1	75	37	2,300

Illinois and Kentucky

By STAFF CORRESPONDENT

New Operations Keep Ahead of Illinois Basin Completions

MATTOON, Ill., Aug. 22.—The number of oil wells in the Centralia field of Clinton and Marion counties is rapidly approaching the 400 mark, leading all the fields discovered this year and last in completed work.

With 40 rigs up and 247 wells drilling the Illinois fields maintain their record of keeping ahead of the wells completed. Present day number of drilling wells is the largest since the Central Basin fields were opened early last year.

A report from Vandalia says that due to the oil activity in Fayette County, Judge F. R. Dove will be faced with one of the heaviest dockets in the history of the county when he opens the August term of circuit court here Monday.

According to the court records there are 249 civil cases on the docket for the August term. Many of the cases listed are in one way or another connected with the oil activity in the county, including suits for title clearance, foreclosures on land in the potential producing areas, property divisions and failures to fulfill contracts.

Circuit Clerk LaVerne Deal reported a record in recording fees in the office the past week as a result of the oil activity in the county.

In St. Clair County Group Oil Co. No. 1 Buss, C NW SW Section 13-2s-6w was dry and abandoned at 1,012 feet.

Latest Completions

Late reports on completions in the Centralia area in Clinton County include Shell Petroleum Corp. and Adams Oil & Gas Co. No. 2 Felton, SE NE NW Section 1-1n-1w, 66 bbls. per day at 1,330-56 feet, shot with 10 quarts; Shell Petroleum Corp. No. 1 Brough-Hanseman, 250 feet from S and 390 from W lines of NE quarter Section 1-1n-1w, 101 bbls. a day from sand at 1,314-30 feet, shot with 21 quarts; Adams Oil & Gas Co. B No. 2 Koelin, SE cor. SW SW SE Section 12-1n-1w, 80 bbls. a day from sand at 1,361-75 feet, shot with 10 quarts; Brazill & Cullen, No. 1 C NW SE Section 12-1n-1w, 25 bbls. per day from Cypress sand at 1,205-60 feet, not shot; Huddleston & Given No. 1 Vickers, NE cor. SW NE SE Section 12-1n-1w, 75 bbls. per day at 1,358-75 feet, not shot; Shell Petroleum Corp. No. 9 Allison, NW cor. SE NW SE Section 12-1n-1w, 90 bbls. of oil and 14 bbls. of water at 1,348-68 feet, shot with 21 quarts; German and others No. 4 Fallon & Cosio, NW cor. SW SE SE Section 13-1n-1w, 170 bbls. a day from sand at 1,356-68 feet, shot with 10 quarts; O. L. Ray and others No. 1 Langefeld, SW cor. NW NE NE Section 24-1n-1w, 140 bbls. per day from sand at 1,368-85 feet, shot with 5 quarts; Robinson and others No. 1 Cavanaugh, SE cor. NE NW NE Section 24-1n-1w, 100 bbls. per day at 1,372-88 feet, shot with 5 quarts; Joe Waltner No.1 M. Fisher, NW cor. SE NE NE Section 24-1n-1w, 75 bbls. at 1,367-83 feet, shot with 10 quarts.

Newton & Ward have a 175-bbl. well in No. 4 Gross, NE cor. SE SE SW Section 5-1n-3w, Bartelso pool, from Cypress sand at 962-83 feet, shot with 30 quarts.

In Bond County Dr. Leavitt and others No. 1 Biggs, SW SE NE Section 24-4n-2w was a hole full of water in Benoist sand at 1,334-37 feet and was abandoned.

In Montgomery County Baker & Martin No. 1 Yowell, SE NE SE Section 4-8n-5w was a hole full of water and abandoned at 821 feet.

Two wildcat tests in Fayette County were dry and abandoned. These were McDavitt & Youngblood No. 1 Miles, in C E half SW Section 10-6n-3e at 1,920 feet and J. B. Whisnant No. 1 Carter, in Section 14-4n-1w at 1,460 feet.

Twenty-five oil wells and eight dry holes were completed in Clinton, Fayette, Jefferson, Marion, Clay and Richland counties. The total initial production was 8,324 bbls. Following are the completions with the sand record and initial 24-hour production of oil wells:

In Clinton County, Centralia field, Samedan Oil Corp. No. 2 Buehler, NE NE SW Section 1-1n-1w, Benoist pay at 1,315-32 feet, shot with 13 quarts, pumped 100 bbls. American Seismograph Co. No. 1 S. Branan, Lot 13, Block 4, Finney Heights, Section 24-1n-1w, pay at 1,380-87½ feet, shot with 2½ quarts, pumped 40 bbls. Iroquois Oil Co. No. 1 F. Winte, Lot 11, Block 4, Pullen Heights, Section 24-1n-1w, sand at 1,370-82 feet, shot with 10 quarts, estimated 200 bbls. per day. John Knapp No. 1 Harold Stanford, Lot 23, Block 2, Finney Heights, Section 24-1n-1w, sand at 1,367-84 feet, shot with 15 quarts, pumped 85 bbls. Lacey & Rogers No. 1 Joe Wright, Lot 18, Block 1, Finney Heights, Section 24-1n-1w, sand at 1,364-80 feet, shot with 20 quarts, pumped 150 bbls. Quinsberry Drilling Co. No. 1 R. N. Burrough, Lot 22, Block 8, Finney Heights, Section 24-1n-1w, sand at 1,374-90 feet, shot with 15 quarts at 1,376-86 feet, pumped 180 bbls. Roberts Brothers Drilling Co. No. 1 William Hozar, Lot 8, Block 2, Finney Heights, Section 24-1n-1w, sand at 1,365-78 feet, shot with 10 quarts, 165 bbls. on pump. G. C. Rockwood No. 1 Horstman, Lot 7, Block 1, Pullen Heights, Section 24-1n-1w, sand at 1,380½-87 feet, no shot, pumped 40 bbls.

ILLINOIS FIELDS

HIGHLIGHTS OF THE WEEK: Centralia field approaches close to 400 mark in number of oil wells with no let-up in operations. Number of wells drilling in state, 247, hits new record for year.

Daily production of new pools, 48,109 bbls., a new high; old fields, 13,596 bbls. Total, 61,705 bbls.

Completed oil wells, 25. New operations (including locations), 75. Rigs and wells drilling, 287.

A wildcat in Clinton County, Taylor Drilling Co. No. 1 Harry Meyers, C NW SW SE Section 5-3n-1w, was dry and abandoned at 1,620 feet, presumably in the St. Louis horizon. Benoist sand was topped at 1,414 feet, Ste. Genevieve lime at 1,519 feet, Fredonia at 1,574 feet.

Marion County

In Marion County, a wildcat of Harris & Broadus, No. 1 Doctor Welch, SE cor. NW Section 2-1n-1e, was dry and abandoned. Bethel sand was topped at 1,947 feet, Roseclaire 2,036 feet, McClosky lime at 2,158 feet, total depth 2,194 feet. All the tops are approximated. It had no showing at any depth.

In the Centralia field in Marion County, J. T. Furr No. 1 J. Peiffer, Lot 7, Block 8, Second Home Terrace, Section 7-1n-1e,, is an abandoned location. George Oexner No. 1 Washington School, Block F, Railroad Addition, Section 8-1n-1e, Bethel sand at 1,354 feet, pay at 1,365-85 feet, shot with 10 quarts at 1,378-83 feet pumped 65 bbls. Lane & Edwards No. 1 Bailey, an outpost, in Lot 14, Block 8, Bronson Place, Section 30-1n-1e, dry and abandoned at 1,735 feet. It had Bethel sand at 1,424 feet, Fredonia lime at 1,612 feet, McClosky at 1,613 feet, total depth 1,735 feet. It had no showings at any depth. Another outpost, J. L. Williams No. 1 J. McCrary, 360 feet from north and 330 feet from west lines of SE quarter Section 24-1n-1e, was dry and abandoned at 2,150 feet. It topped Paint Creek at 1,940 feet, Benoist at 1,960 feet, Renault at 2,014 feet, Aux Vases at 2,026 feet, Ste. Genevieve lime at 2,116 feet, Roseclaire at 2,142 feet. It found no signs of oil at any depth.

In the Texaco or Lake Centralia field, east of the city of Centralia, J. G. Wanner No. 1 Raccoon School, SE cor. NE Section 6-1n-2e, Benoist sand at 1,719-43 feet, estimated initial production 700 bbls., flowing naturally through 2-inch tubing.

Adams Oil & Gas Co. No. 2-A Edward Copple, a twin well, 1,020 feet from west and 920 feet from south lines of SE quarter Section 35-2n-1w, Centralia pool, in Clinton County, had pay at 1,342-66 feet, shot with 10 quarts, it produced 123 bbls. in 24 hours. W. C. McBride, Inc. No. 2 Carson, a twin, 380 feet from south and 990 feet from east lines of NE SE Section 35-2n-1w, Benoist pay at 1,352-69½ feet, shot with 10 quarts, pumped 125 bbls.

Clay and Richland Counties

In Clay County, Pure Oil Co. No. 5 Tetrick A, C W half NE NW Section 9-2n-8e, McClosky pay at 2,995-3,030 feet, total depth, acidized with 5,000 gallons, flowed 699 bbls. Pure Oil Co. No. 3 N. V. Bunn, C W half SW NE Section 16-2n-8e, McClosky pay at 3,043-70 feet, acidized with 5,000 gallons, flowed 775 bbls. net oil. Pure Oil Co. No. 4 J. E. Moseley A, C E half NE SW Section 16-2n-8e, McClosky at 3,002-38 feet, flowed 398 bbls. Pure Oil Co. No. 1 Joseph Ullom, C W half SE SW Section 16-2n-8e, McClosky at 3,005-50 feet, acidized with 5,000 gallons, flowed 829 bbls. through 2-inch tubing. Pure Oil Co. No. 2 C. R. Bunn B, C W half NE NE Section 17-2n-8e, McClosky at 3,005-41 feet, acidized with 5,000 gallons, flowed 313 bbls. Pure Oil Co. No. 1 E. Chafin B, C W half NE NE Section 19-2n-8e, an outpost, was dry and abandoned at 3,169 feet, Fredonia lime was topped at 3,020 feet. A Schlumberger test was run, but it indicated no production.

In the Flora pool in Clay County, Kingwood Oil Co. No. 1 E. Cash, C N half NE SE Section 13-3n-6e, was a hole full of water and was abandoned at 3,100 feet. Fredonia lime was topped at 3,100 feet. In the Clay City pool, Pure Oil Co. No. 1 J. H. Smith, C W half NW SW Section 33-3n-8e, flowed 820 bbls. initially through 2-inch tubing, producing from McClosky lime at 2,952-3,002 feet. It had not been acidized. A. H. Carpenter and others No. 1-A, a twin well drilled deeper from 2,160 feet was drilled to 3,491 feet. It had an 8- to 10-bbl. showing in tight lime at 3,460-77 feet, but was temporarily abandoned.

In Richland County, Noble pool, Pure Oil Co. No. 2 McFarland and others, 1,933 feet from south and 1,975 feet from west lines of SE quarter Section 17-3n-9e, was completed in McClosky pay at 2,958-78 feet and pumped 146 bbls. initially after a 5,000-gallon acid treatment. In the South Noble pool, Mammoth Producing & Refining Co. No. 2 Bell, NW NW SW Section 28-3n-9e, was dry and abandoned at 3,112 feet. It had no showings of oil. In the Olney pool, Richland County, Texas Co. No. 1 Winters, NE NE SE Section 27-4n-10e, was acidized with 6,000 gallons in McClosky pay at 3,076-94 feet, total depth 3,108 feet, and flowed 107 bbls. in four hours; 213 bbls. in 17 hours, and 182 bbls. the following 24 hours.

In Fayette County, Louden pool, Kingwood Oil Co. and Duncan No. 2 Yolton, a twin, NE SW NW Section 7-7n-3e, had Weller pay at 1,472-1,517 feet and pumped 432 bbls. the first 24 hours. It had not been shot or acidized. Carter Oil Co. No. 1 H. Lilly, C SE NE SW Section 16-8n-3e, had Benoist sand at 1,555-82 feet, which was shot with 60 quarts. It flowed 638 bbls. of oil in 24 hours through tubing. It was shut in for lack of

(Continued on page 106)

Kansas Developments

By DAL DALRYMPLE

Schroeder, South Ainsworth, Latta Sectors Get Extensions

The Schroeder pool in southwestern Ellsworth County was extended one-half mile southeast at Cities Service Oil Co. No. 1-C Mollhagen, CW½ SE Section 27-17-9w, which will be the sixth producer for the pool when completed. Arbuckle lime was found at 3,229 feet, total depth 3,239 feet, and oil rose 1,550 feet in the hole in one and one-half hours. It had 3,000 feet of oil in the hole when operators were preparing for potential test at the week-end. The five older producers in the pool have total potential of 11,590 bbls. daily.

Atlantic Refining Co. No. 1 Wise, NW cor. Section 13-24-14w, wildcat 3 miles southwest of St. John in Stafford County, set 7-inch casing at 3,778 feet, total depth, and was preparing to drill deeper. Gas production of 5,500,000 feet, accompanied by 7 bbls. of oil an hour, coming from Lansing lime topped at 3,583 feet, had been killed. The oil was cutting 18 per cent water. If the deeper Lansing pay fails to produce, operators are expected to drill to Arbuckle lime and, failing to find oil there, to plug back, perforate casing and complete in the upper pay. Location is on a communitized block in which the Atlantic, Darby, Continental, Tide Water Associated, and Cities Service companies are interested.

The Latta pool in southwestern Sumner County was extended one-half mile westward at L. H. Wentworth and others No. 1 Latta, NE SE NE Section 8-30-2w. It made potential of 95 bbls. of oil daily from Landsing lime, total depth 3,089 feet.

J. J. Hall No. 1 Kruse, SE SE NE Section 3-10-16w, revived the old Kruse pool of Rooks County when it made potential of 169 bbls. of oil daily after acidizing. Total depth was 3,126 feet in Lansing lime. Location is one-half mile southeast of the discovery well, Derby Oil Co. No. 1 Kruse, NW NE NE Section 3-10-16w, which was completed at 3,167 feet for a small producer in 1928, but was abandoned a year later while operators were deepening and tools became stuck in conglomerate.

The Hittle pool of Cowley County remained in the Kansas spotlight with two new Arbuckle lime producers nearing completion. Texas Co. No. 1 Goodrich, SE SW SE Section 21-31-4e, produced 335 bbls. of oil in an unspecified period Sunday, and was averaging 50 bbls. of oil an hour. Operators were preparing to take potential test Monday. It was bottomed at 3,280 feet in Arbuckle lime. Trees Oil Co. No. 4 Lewis, NW NE NE Section 28-31-4e, was taking potential and looking like the largest producer in the field, based on rapid fill-up of 1,500 feet of oil in 10 minutes. It topped Arbuckle lime at 3,339 feet. Arthur Brewer was drilling ahead at No. 1 Lewis, NW SE NE Section 28-31-4e, in an attempt to extend Hittle Arbuckle production one-fourth mile southward.

Wildcat Activity

Cities Service Oil Co. No. 1 Smith B, C W half W half SW SW Section 16-21-11w, wildcat 1½ miles southwest of the Snider pool, Stafford County, was completed for potential of 412 bbls. of 35-gravity oil. It found Arbuckle lime at 3,402 feet, was bottomed at 3,412 feet, and pumped 66 bbls. of oil in five hours, naturally. After treating with acid, it pumped 102 bbls. of oil the first four hours and 68 bbls. the next four hours.

Same company's No. 1 Frees, CSL S half NW Section 20-18-9w, wildcat in Rice County, had Arbuckle lime at 3,268-99 feet, total depth, and was dry and abandoned.

Work was started at Champlin Refining Co. No. 1 Elliott, SW SW NE Section 26-27-14w. wildcat 3½ miles northwest of Pratt City in Pratt County. Rotary rig was being erected. Nearest production is the Iuka pool, 7½ miles northeast.

Other new Kansas wildcats were: Cameron & Spencer No. 1 Frey, NW cor. Section 5-30-1e, Sumner County, building rig; Ben Gralapp and others No. 1-A Clark, NW NW NE Section 11-31-3e, Cowley County, rig; Watchorn Oil & Gas Co. No. 1 Cladwell, NE SE NE Section 29-20-9w, Rice County, rotary rig; Stanolind Oil & Gas Co. No. 1 Curtis, SE cor. Section 31-21-12w, Stafford County, rotary rig.

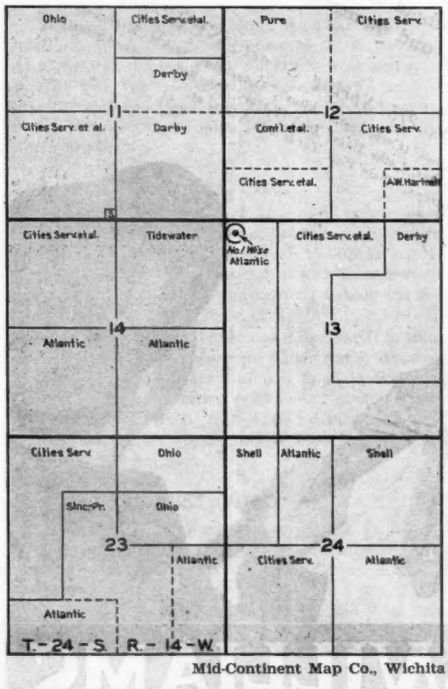
Stafford County

E. H. Moore, Inc., No. 2 Johnson, SW cor. Section 13-24-11w, Zenith pool, was completed for potential of 4,111 bbls. of oil through tubing, making it one of the larger producers to be completed in Kansas in recent months and giving Stafford County its largest producer. Gas gauged 2,300,000 feet. Misener sand was topped at 3,798 feet, total depth 3,814 feet. It flowed 734 bbls. of oil the first four hours and 685 bbls. the next four hours.

Stanolind Oil & Gas Co. No. 2 Fuller, NE NE SW section 11-24-11w, had Misener sand at 3,740 feet, was bottomed at 3,750 feet, and flowed 268 bbls. of oil the first four hours, 264 bbls. the next four hours and made potential of 1,583 bbls.

Torry & Feaster No. 1 Ziegenbusch, SE cor. Section 28-21-12w, found Arbuckle lime at 3,610 feet, total depth 3,652 feet, was acidized, pumped 30 bbls. of oil and pumped off, and was completed as a 15-bbl. minimum well.

New work in Stafford County: Republic Natural Gas Co. No. 1 Hart, NW SW SE Section 20-22-11w, Richardson area, location; Stanolind Oil & Gas Co. No. 3 Fuller, NE SE SW Section 11-24-11w, Zenith pool, building rotary rig; same company's No. 3 Hayes, SE SW SE Section 11-24-11w, building rotary rig; Jack Robertson and others No. 2 Community, NW NE SE SE Section 14-24-11w, rotary rig.



Mid-Continent Map Co., Wichita

Atlantic Refining Co. and others wildcat in Section 13-24-14w, southwest of St. John, Stafford County, was drilling deeper after showing gas and oil in upper Lansing lime

Estimated Daily Production

Estimated daily production for Kansas for the week ending August 20, and for the preceding week, was as follows:

	Barrels	
	Aug. 20	Aug. 13
Oxford City	1,500	1,250
Burrton	9,375	9,400
Ritz-Canton	6,050	4,750
Graber	3,425	2,575
Hollow-Nikkel	2,975	3,025
Lerado	1,050	950
Voshell	2,600	2,000
Wellington	3,300	3,500
Ellsworth County:		
Lorraine	2,080	1,775
Other pools	1,575	1,165
Rice-Barton counties:		
Bloomer	2,635	2,450
Chase	4,200	4,425
Geneseo	3,575	3,100
Raymond	925	700
Silica	12,350	11,300
South Silica	1,875	1,975
Keesling	925	775
Wherry	3,325	5,175
Miscellaneous Barton	7,237	7,180
Miscellaneous Rice	3,570	3,480
Russell County:		
Fairport	1,885	1,380
Gorham	1,795	1,610
Russell	1,230	1,230
Sullivan	5,850	5,445
Trapp	8,125	7,550
Miscellaneous Russell	7,145	7,495
Sedgwick County:		
Valley Center	1,030	1,015
Miscellaneous	2,910	3,070
Ellis County:		
Bemis	5,625	7,175
Miscellaneous	3,020	3,065
Kingman County	595	580
Stafford County	4,345	4,530
Greenwood County	9,375	9,400
Butler County	19,640	21,975
Other fields	20,988	18,730
Total Kansas	168,075	165,200

Barton County

Magnolia Petroleum Co. No. 3 Mueller, NW NE NE Section 1-18-11w, Bloomer district, Barton County, topped Arbuckle lime at 3,243 feet, total depth 3,247 feet, pumped 362 bbls. of oil the first four hours, 367 the next four hours and made potential of 2,172 bbls.

C. L. Price No. 1 Stumps, SW SW SE Section 3-17-12w, had Arbuckle lime at 3,321-25½ feet, plugged back 1 foot, pumped 41 bbls. of oil in each of two four-hour tests and made potential of 246 bbls. of oil, cutting 10 per cent water.

The South Ainsworth pool was extended three-fourths mile eastward at Western Kansas Oil & Refining Co. and others No. 1 Gage, CE half W half NW Section 2-17-13w, was completed for potential of 1,804 bbls. of oil after pumping 301 bbls. of oil in four hours, 312 bbls. the next four hours, following two-time acid treatment. Production was from Arbuckle lime topped at 3,309 feet, total depth 3,326 feet.

Shell Petroleum Corp. No. 2 Ehrlich A, NW cor. Section 18-16-13w, South Trapp area, had Arbuckle lime at 3,365 feet, total depth 3,389 feet, was acidized and swabbed 168 bbls. of oil in seven hours, later pumping 105 bbls. in the first four hours of test, 76 bbls. the next four hours and making potential of 456 bbls.

Three new Barton County operations were reported. Indian Territory Illuminating Oil Co. No. 1 Hoffman B, C S half S half NW Section 7-16-13w, South Trapp pool, was a rotary rig. Magnolia Petroleum Co. No. 4 Mueller, SW NE NE NE Section 1-18-11w, Bloomer field, was building rotary rig. Stanolind Oil & Gas Co. No. 1 Musenberg, NE cor. Section 27-20-11w, South Silica pool, was moving in material.

Russell County

Wolf Creek Oil Corp. No. 1-A Witt, NE SE SW Sec-

tion 10-14-15w, Gorham area, was rated potentially at 2,410 bbls. of oil daily, making it the largest of five wells completed in Russell County the past week. It found Gorham sand at 3,262-66 feet, total depth, and pumped 402 bbls. of oil the first four hours and 416 bbls. the next four hours.

Aylward and others No. 2 Holt, C N half N half SW Section 22-14-14w, topped Lansing lime at 3,015 feet, had pay at 3,047-62 feet, total depth, and was acidized. It pumped 222 bbls. of oil the first four hours, 210 bbls. the next four hours and made potential of 1,262 bbls.

Lauck & Moncrief No. 2 Miller, SE SW NW Section 29-13-14w, had Arbuckle lime at 3,282 feet, total depth 3,303 feet, and swabbed 33 bbls. of oil in five hours. It was treated with acid, pumped 140 bbls. the first four hours, 109 bbls. the next four hours and made potential of 657 bbls.

W. I. Southern, Inc., No. 14 Boomhower A, NW NE NE Section 30-15-13w, Trapp field, pumped 58 bbls. of oil the first four hours, 61 bbls. the next four hours and was rated potentially at 350 bbls. daily. Top of Arbuckle lime was 3,254 feet, total depth 3,261½ feet.

Central Petroleum Co. No. 1 Kuhnle, NE NE SW Section 4-15-12w, Greenvale pool, found Lansing lime at 2,980 feet, had pays at 2,997 and 3,062 feet, was bottomed at 3,067 feet. It pumped 118 bbls. and 92 bbls. of oil in two four-hour tests, making potential of 551 bbls. of 36.1-gravity oil.

Phillips Petroleum Co. No. 4 Winteer, NW SW SE Section 19-13-14w, Atherton area, was a location.

Ellis County

Dickey Oil Co. No. 1 Stein, NW NW SE Section 7-11-17w, Ellis County, found Arbuckle lime at 3,447-50 feet, total depth. It pumped 302 bbls. of oil the first four hours, same amount the next four hours and made potential of 1,811 bbls. of 32.3-gravity oil. It is in the South Burnett area.

New operations in Ellis County: Darby Petroleum Corp. No. 2 Jorgenson, NE NE SW Section 7-11-17w, South Burnett area, building rotary rig; same company's No. 1 Hadley A, NE SE SE Section 12-11-18w, South Burnett, moving in material; Cities Service Oil Co. No. 3 Rumsey, NW NE SW Section 23-11-17w, Bemis field, cellar; C. B. Davis and Glimad Oil Co. No. 1 Richards Ranch, NE NW SW Section 5-11-18w, Richards pool, rotary rig.

Rice County

Another large producer was completed in the Geneseo district, Rice County, at Shell Petroleum Corp. No. 4 Zajic, NE NW NE Section 13-18-8w. It found Arbuckle lime at 3,159 feet, was bottomed at 3,224 feet and was treated with acid. It pumped 444 bbls. of oil the first four hours, 463 bbls. the next four hours and made potential of 2,662 bbls.

A failure was recorded in the Sterling area at Calickan & Virginia Drilling Co. No. 1 Fair, C W half E half E half Section 4-22-8w. It was dry and abandoned in Arbuckle lime at 3,756-75 feet, total depth.

Three new tests in Rice County were reported. Shell Petroleum Corp. No. 6 Zajic, NW NE NE Section 8-18-10w, Geneseo field, rigging up rotary; Transwestern Oil Co. and others No. 1 Habiger C, SW SW NE Section 8-18-10w, South Stumps pool, rigging up rotary; L. E. Douglass Oil & Gas Co. No. 1 Engelland, NW NE SW Section 15-21-7w, Wherry pool, set 16-inch casing at 120 feet, waiting on cement.

McPherson County

H. & M. Drilling Co. No. 1-A Wiggers, C NE NE Section 36-19-2w, Ritz-Canton pool, McPherson County, topped chat at 2,925 feet, total depth 2,978 feet, flowed 100 bbls. of oil daily and naturally. It was acidized, pumped 114 bbls. the first four hours, 92 bbls. the next four hours and made potential of 555 bbls.

F. S. Williams No. 1 Lewis, NW SW SE section 30-19-1w, had chat at 2,937 feet, total depth 2,962 feet, was acidized, pumped 70 bbls. of oil in each of two four-hour tests and made potential of 418 bbls.

Springrose Drilling Co. No. 1 Tull, SE NW SW Section 13-19-3w, McPherson pool, set 10-inch casing at 120 feet and was waiting on cement.

Butler County

Polhamus and others No. 8 Semisch, NW NE NE Section 5-28-7e, Butler County, found Bartlesville sand at 2,735 feet, had first oil at 2,738 feet, total depth 2,775 feet, plugged back to 2,759 feet, was shot and pumped 15 bbls. of oil daily.

Republic Natural Gas Co. No. 1-A Burnham, SW NW NW Section 11-28-7, North Brandt pool, was dry and abandoned in Arbuckle lime at 3,228-32 feet, total depth.

Rex & Morris and others No. 1 Farner, SE cor. Section 22-28-7, was moving in material.

Sedgwick County

L. W. Prunty No. 1 Lennery, NW NE SE Section 17-25-1e, Sedgwick County, found Misener dolomite at 3,334-39 feet, was acidized, pumped 136 bbls. of oil the first four hours, 147 bbls. the next four hours and made potential of 819 bbls. of oil, with 50 per cent water.

Prunty Production Co. No. 1 Westerfield, SE SE SW Section 16-25-1e, Goodrich pool, was moving in material for a rotary test. Magnolia Petroleum Co. No. 1 Jabes, NE NW SE Section 8-27-2e, North Eastborough pool, was a rotary rig.

Grant County

Columbian Fuel Co. No. 1 Baughman, C NW Section 28-28-36w, Grant County, was completed at 2,710 feet, total depth. It originally produced 3,500,000 feet of gas; was shot and flow increased to 6,500,000 feet, and then was acidized and gauged 19,000,000 feet daily.

Additional First Reports

In Greenwood County, Shull Drilling Co. No. 1 Long, SW SE NE Section 17-23-13e, was drilling below 725 feet; James Enright No. 15 Swanson, C E half E half SE Section 20-23-13, was shut down at 550 feet; Houston-Oklahoma Oil Co. No. 8 Berry, C SW Section 28-23-13, was drilling below 575 feet.

In Ellsworth County, Phillips Petroleum Co. No. 7 Patzner, SW NW NW Section 30-17-10w, Bloomer district, was building rotary rig.

"It's a WILLIAMS WRENCH"
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Eastern Field Report

By STAFF CORRESPONDENT

Third Deep Test in Fayette County, After 2 Successes

PITTSBURGH, Pa., Aug. 22.—Another deep test is being started by New Penn Development Co. and William E. Snee on Chestnut Ridge in Fayette County. It is on the Uniontown Quadrangle in South Union Township, 2.8 miles southwest of the junction of the Jumonville Road and U. S. Route 40. On the farm line map, it is located on the Indian Creek Coal & Coke Co., William Johnson warrant, 400 feet south of the north line and 100 feet west of the township road, and has a surface elevation of 2,625 feet.

These operators have two gas wells completed in the Onondaga lime chert beds on the Summit Hotel property, the discovery well having been completed early in 1937 and which has been placing a practically constant flow of gas in the lines for over a year. The second well southwest of the first was completed gauging 3,500,000 feet a day with a shut-in pressure of 2,985 pounds, but it has not been tested in the lines to date. The new well is located 2 miles southwest of No. 2.

Northeast of the discovery well, the Greensboro Gas Co. drilled the test on the J. R. Thompson farm, Wharton Township, to a depth of 8,159 feet, finding only a small showing of gas in the cherty zone of the Onondaga. The Onondaga lime here was at 7,360 feet, the Oriskany at 7,556 feet. A shot of 135 quarts was placed at 7,370-7,420 feet and it showed 73,000 feet a day which soon blew down to less than 5,000 feet a day, adding another failure to the deep test record.

In Westmoreland County, Peoples Natural Gas Co. shot its test on the John S. Marshall farm in Penn Township on the Grapeville anticline with 60 quarts at 7,642-68 feet and it also proved barren. The Oriskany was topped at 7,647 feet with about 15 feet of good sand and 80 feet more of sand and lime. The total depth was 7,777 feet. It is now being plugged in the lower Devonian and the upper sands will be tested.

Twenty-five operations were completed in the lower eastern fields during the past week of which six were dry, 12 gas wells, and seven producers with an initial daily production of 100 bbls. There was a good Oriskany gas well in Jackson County, West Virginia, near the Kanawha County line. Most of the new production was in Southeast Ohio, where completions were scarce during the week.

SOUTHEAST OHIO

The best producer for the week in Southeast Ohio was the second test of I. I. Hazlett and others on the S. M. Gutridge farm in the southeast quarter of Section 18, Hopewell Township, Licking County. It was completed in the Clinton sand at 3,125 feet, and produced 60 bbls. the first day after shot.

In Athens County, McCune & Gross completed a test on the R. O. Burson farm in Section 19, Lodi Township, through the Mitchell sand, total depth 450 feet, and it was dry.

In Trumbull County, Norwood P. Johnston and others topped the Clinton sand at about 4,032 feet in the test on the G. M. Porter farm west of the Mecca crossroads, Mecca Township, and has progressed slowly due to the hardness of the formation.

SOUTHWEST PENNSYLVANIA

In Fayette County, near Uniontown, Orville Eberly and others topped the Big lime at 1,210 feet in the Springer test in Menallen Township with the Big Injun at 1,250 feet; first gas (20,000 feet) at 1,344 feet; at 1,344-48 feet, 550,000 feet; at 1,351-52 feet the test gauged 1,250,000 feet a day, which decreased to 700,000 feet a day at 1,392 feet.

About 1,500 feet southwest, Doctor Spear and others are drilling-in a test on the Ernest Hibbs farm which topped the Big lime at 1,135 feet; Big Injun, 1,167 feet, which places it high on the structure. However, over 90 feet in the sand, it was void of any showing. Offsetting this, the same operators are drilling at 120 feet starting a test on the Luke Williams farm. East and slightly north, these operators are rigging up on the Bates farm.

In Greene County, Charles Mong and others completed No. 3 Jesse L. Metz (Weir heirs) farm in Center Township at 3,122 feet as a gas well. The Nineveh Thirty-foot sand was topped at 3,113 feet and 9 feet in there was a showing of 1,000,000 feet of gas a day. The oil pay had not been reached. In this township the Equitable Gas Co. is deepening No. 1 D. M. Thorp at 2,955 feet and in the No. 1 G. M. Kuhn is drilling at 3,150 feet with the Fifty-foot sand at 3,116 feet and 55,000 feet of gas at 3,147-49 feet.

In Washington Township, Greene County, Equitable Gas Co. has reached 1,325 feet in the John Huffman test. In Franklin Township the same company is shut down for repairs at 3,050 feet on the W. L. Jacobs farm; and in Greene Township it is deepening the W. E. Blaker test at 2,425 feet.

In Aleppo Township, Burleigh Wright is drilling on the William McVay farm at 720 feet. Cochran & Cochran have run casing to 2,396 feet in No. 4 John Strope. In Morris Township, R. E. Hoskinson and others are drilling at 1,830 feet in the Ealy-Conklin test. In Richhill Township, Smith McCeacken drilled past lost tools and cemented at 3,085 feet. Fred Garrison had reached 2,530 feet on the Stoneking farm in Monongahela Township.

Washington County

In South Franklin Township, Washington County, Hennen & Walker have a rig up on the Mary M. Andrew farm. In Amwell Township, Harry Williams and others are drilling at 750 feet in No. 1 Dean Swart. In Morris Township, Union Gasoline & Oil Corp. is drilling at 1,335 feet in the No. 2 L. G. Craft.

In South Strabane Township, the Penn Ohio Oil & Gas Co. is drilling at 2,800 feet in the W. E. Davis test with the Fifty-foot sand at 2,688-2,738 feet and water at 2,698 feet. The hole is being cased with 5 3/16 inch. In Plum Township, Allegheny County, the Hope Construction & Refining Co. is down 2,760 feet deepening No. 4 Adam Elicker.

Deep Tests

In Beaver County, John T. Galey and others topped the Onondaga lime at 4,566 feet in the test on the Eliza Allen heirs farm in South Beaver Township and are now 75 feet into that formation, which runs over 200 feet thick. Casing will be run before reaching the Oriskany sand.

In Fayette County on Chestnut Ridge, the L. J. Houze Convex Glass Co. recovered the bailer lost at 6,640 feet in the test on the Paul Dunham farm in Springhill Township and has reached 6,660 feet. Top of the Onondaga was revised to 6,628 feet. In North Union Township, Wasson & Co. are drilling at 5,700 feet in the test on the J. H. Sorg farm.

WEST VIRGINIA

Five oil wells were completed in West Virginia. In Gilmer County, the McCall Drilling Co. completed a test on the Clara Snyder farm in DeKalb district in the Big Injun sand at 2,083 feet, good for 3 bbls. a day.

In Ritchie County, Thomas J. Davis and F. A. Deem completed an 8-bbl. well on the Frank Foster farm in Grant district at 1,714 feet. It also produced 375,000 feet of gas from the Salt sand. It may be deepened to the Injun sand. In the Murphy district, Border Oil & Gas Co. completed a well on the Border Heirs tract in the Maxon sand at 1,481 feet and it is showing 3 bbls. a day and 30,000 feet of gas. In Union district, the Diamond Oil & Gas Co. purchased the test on the Harrison Wright farm and completed it in the Berea sand as a 1-bbl. pumper, total depth 2,480 feet.

In Roane County, the American Oil & Development Co. completed No. 5 J. F. Conley farm in Harper district in Salt sand at 1,625 feet and it is starting off at 20 bbls. a day.

Gas Wells

In Cabell County, the DeJarnette Gas Co. deepened No. 1 D. H. DeJarnette in the McComas district from 1,354 feet to 3,123 feet. The Big Injun sand was bottomed at 1,445 feet; Berea, 1,897-1,910 feet; Brown shale, 2,715-3,090 feet, with gas at 2,840-70 feet. The gauge from the Berea and shale was at the rate of 160,000 feet a day eight hours after shot.

In Gilmer County, C. Fred Wilson completed a second test on the R. E. Campbell farm in Glenville district in Injun sand at 1,651 feet and it is a gas well gauging 500,000 feet a day. In Center district, Phillip D. Phillips completed a No. 6 Belinda R. Fetty in Injun sand at 2,296 feet. It made 40,000 feet of gas before the shot at 1,988-90 feet and 2,056-64 feet. In this district, Hope Natural Gas Co. drilled No. 7,809 Louis Bennett to 2,228 feet and it was a gasser good for 84,000 feet a day before the shot.

In Lincoln County, Roy & McComas completed deepening the Canan Adkins and others test in Union district at 3,472 feet starting from 2,148 feet. The Brown shale started at 2,842 feet with gas at 2,842-3,130 feet, 3,142-3,204 and 3,226 feet. It gauged 134,000 feet a day three hours after shot and was bottomed at 3,472 feet.

IIn Pleasants County, Steele & Gallagher drilled No. 9 Silas Gallagher farm in Washington district deeper through the Squaw sand to 1,455 feet. It was dry with a small showing of gas in the Injun sand.

In Ritchie County, T. F. Moats and George Barker and others completed a test on the H. C. Moats farm in Union district in the Injun sand at 2,159 feet and it is a gas well gauging 250,000 feet a day. In Grant district, Phillip M. Lemon drilled a test on the A. B. Shrader farm through the Squaw sand to 2,194 feet and it was dry.

In Roane County, Hope Natural Gas Co. drilled No. 7,817 on the Alice McMillan farm in Smithfield district to 1,805 feet and it was dry. The Big lime was at 1,593-1,805 feet and was broken with a showing of gas at 1,690-94 feet, and the Big Injun sand was missing. It will be abandoned.

In Wayne County, R. H. Adkins, on the Cline Fraley farm in Union district, completed a gas well at 3,128 feet. Brown shale lay at 2,513-3,128 feet with gas at 2,457 feet, 2,608 feet and 2,620 feet. The volume was 894,000 feet a day.

In Wetzel County, the Harrison Ritchie Oil & Gas Co. completed the test on the Robert W. Huff farm in Green district at 2,670 feet, the Gordon sand yielded 100,000 feet of gas per day and a small oil show. It may be shot.

In Wirt County, Glen W. Roberts completed No. 7 George W. Hall Heirs in Burning Springs district in Keener sand at 1,780 feet and it is a gas well gauging 750,000 feet a day.

Oriskany Gas Field

In the southern top of Jackson, Kanawha County, one well was completed which adds an extension to the field. In Washington district, the United Carbon Co. is completing No. 3 Elizabeth Ward Perkins with the Corniferous lime topped at 5,102 feet; Oriskany, 5,230 feet, and 8 feet in that formation there was a gauge of 6,096,000 feet a day. This adds another mile to the north of production.

(Continued on Page 108)

Southwest Texas District

By
F. L. SINGLETON

Scattered Wildcats Loom as Openers of Pools; New Pays

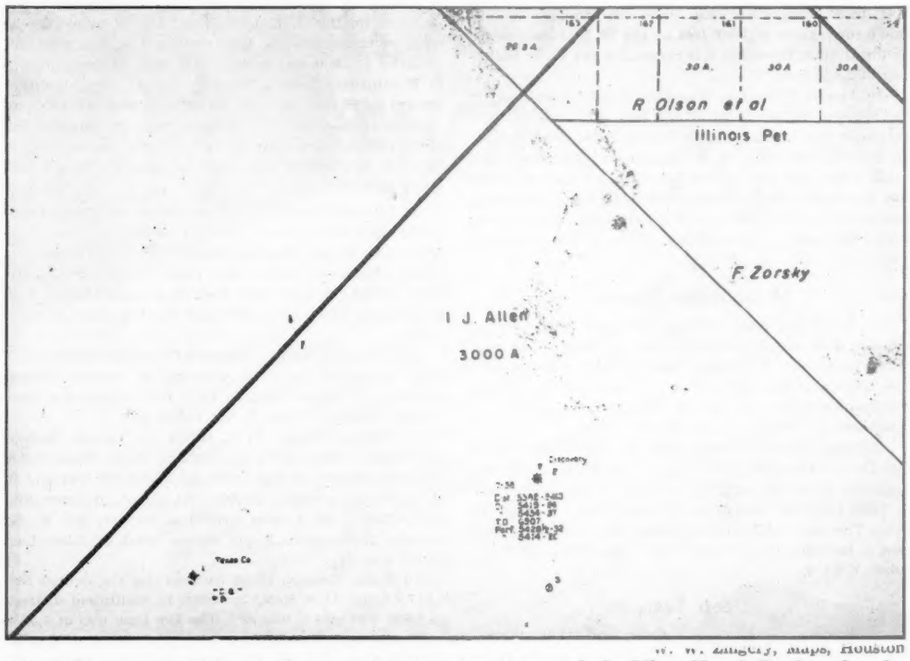
CORPUS CHRISTI, Tex., Aug. 22.—Several wildcats throughout the Southwest Texas district loomed as possible pool openers, while new sand discoveries and important extensions were promised for several fields. Two wildcats in the Balcones Fault Line district showed evidence of production and another such test along the Pettus trend in Bee County was being tested.

George E. Smith No. 1 San Antonio Joint Stock Land Bank, about 6 miles northeast of Pearsall, Frio County, cored saturation in the Navarro sand and was expected to open a field along the Balcones Fault Line. Oil sand was cored at 3,724-30 feet, and from 3,730-38 feet, sand with hard streaks showing oil was recovered. On a 15-minute drill stem test at 3,721-38 feet it showed a working pressure of 5 pounds and 180 feet of mud, cut with oil and gas. The hole is bottomed in oil sand at 3,738 feet and casing was cemented for completion. The well is in the G. B. & C.N.G.R.R. Survey, southwest of the Pearsall field, where Amerada Petroleum Corp. has developed production from both the Navarro and Edwards lime formations.

On the Anchorage serpentine prospect, Atascosa County, Western Gulf Petroleum Co. No. 1 Vanegas, Francisco de la Garza Survey, topped Serpentine at 2,703 feet, and is being tested at a total depth of 2,748 feet, with casing cemented at 2,720 feet. This is the second test drilled in the area. The first, drilled by Mason Altgelt, is reported to have shown oil in the serpentine, but due to mechanical trouble the well was abandoned.

Along the Pettus trend in Bee County, Atlantic Refining Co. No. 1 Courtney, northwest of Pettus in the George Kerr Survey, cored shale and shell with an oil odor at 3,658 feet, and sand with an oil odor at 3,658-60 feet. After two drill stem tests failed, an analysis was made of the cores and is reported to have shown good saturation. Casing was cemented and the well is scheduled to be tested this week.

Another wildcat along the Frio trend through Jim Wells County cored sand with several showings of oil and gas. The well is Humble Oil & Refining Co. No. 1 Adams, about 5 miles northeast of Ben Bolt in the Marcello Lopez Survey. Sand with an oil odor was cored at 5,787-94 feet and on a 22-minute drill stem test, using a 200-foot water cushion, 400 feet of mud, cut with oil and gas, was recovered. The hole was cored ahead at 5,797-99 feet, recovering 18 inches of sand which showed 1 per cent saturation on an ether test. The hole is being cored ahead and on last report was still in sand having an oil and gas odor. Northwest of Bentonville in the Apolinario de la Garza Grant, Humble Oil & Refining Co. was preparing to spud No. 1 True. Another interesting wildcat which has gotten underway is Smith & McDannald No. 1 Rooney, in the extreme northeast corner of the county, Block 11, J. H. Gallagher subdivision in Casa Blanca Grant. It is a projected 6,500-foot test.



Woodsboro area, Refugio County, showing location of I. J. Allen No. 2 Rooke, the discovery well completed as a distillate producer

Operators in the South Alice field, Jim Wells County, were watching a scheduled production test of a shallow sand in H. H. Howell No. 1 Mosser, about 2 miles southwest of production. This well was drilled to a total depth of 7,280 feet and was scheduled to be abandoned, but due to sidewall cores, taken at 6,080-6,100 feet and at 4,790-4,800 feet, the operator decided to cement casing for a test of the 4,700-foot horizon, which carried an oil odor. In the southwest extension area of the field, Robert Bowles Oil Co. No. 2 Ragland, showed evidence of production in a shallow sand when it tested 480 feet of pipe line oil on a 10-minute drill stem test at 4,984-5,002 feet. The well is coring ahead for the discovery horizon at 5,300 feet.

In the Saxet field, Nueces County, another deep sand was indicated by the showing of Hiawatha Oil & Gas Co. No. 7-B Smith. Sand with a good showing of oil and gas was cored at 7,240-78 feet and sand with a slight odor at 7,324-44 feet. The hole is bottomed at 7,468 feet and 7-inch casing was cemented at 7,428 feet.

One of the most attractive wildcats announced for the Corpus Christi area in several weeks was made by the Texas Co. for a projected 8,500-foot test to be drilled on Mustang Island, due east of Corpus Christi and in Nueces County. The location is on the Sarah E. Little and others lease, 854 feet from the southeast line and 1,850 feet from the southwest line of the William Little Survey, Abstract No. 210. It is near the shore of the Gulf of Mexico, about 7 miles from Port Aransas and across from Shamrock Cove on the Corpus Christi Bay side of the island. It will be the first important test to be drilled on the island, and will be exceptionally interesting from a geological angle inasmuch as it will be farther down dip than any wildcat ever drilled in the area.

Northwest of Sinton in San Patricio County, Wallace Morgan is moving in material for a 6,500-foot wildcat, located on the M. F. Smith lease, in Tract 111, Section 23, George Paul subdivision of the Welder ranch.

In the Tesoro field, Duval County, Rowan & Hope No. 1 Cuellar Brothers, a north offset to the discovery well, tested salt water in the Yegua sand on a drill stem test at 5,356-60 feet, and 5½-inch casing was cemented at 5,100 feet, preparatory to completing in the Pettus sand, where a drill stem test at 5,074-81 feet tested 500 feet of oil and 55 pounds of pressure.

Houston Oil Co. added another producer to the Fitzsimmons field, Duval County, with the completion of No. 1 Fitzsimmons for a potential of 246 bbls. per day through a quarter-inch choke with tubing pressure 400 pounds and casing pressure 1,000 pounds. The well is producing from the Pettus sand at 4,314-28 feet.

The McCampbell field, Aransas and San Patricio counties, was extended approximately 1,200 feet south with the completion of Shasta Oil Co. No. 1 fee. The hole is bottomed at 7,180 feet and the well was completed through perforated casing at 7,128-38 feet. This is the third extension for the field within the past few weeks, and drilling activity is expected to show a slight increase.

In the newly opened McAllen field, Hidalgo County, R. E. Harding continues to test No. 1 Lynn, completed last week as a distillate producer. This well flowed approximately 25 bbls. of distillate when completed through perforated casing at 5,970-74 feet, but it is reported to have started to show a slight amount of salt water.

A potential test of Hiawatha Oil & Gas Co. No. 5 Miller, 4,700 feet west of the Sweden field, Duval County, showed the well capable of producing only 50 bbls. per day through a quarter-inch choke with 120 pounds of casing pressure. Completion was made through perforated casing at 4,895-4,915 feet which opens a new sand for the structure.

COMPLETED WELLS

Bexar County

Von Ormy field: Shadrock Oil Co. No. 15 Barragan, 660 feet, 4 bbls., pumping.

Caldwell County

Branyon field: Ralph Ogden No. 3 Barber, 2,697 feet, 55 bbls., pumping. Luling field: C. H. Mee and McNeil Petroleum Co. No. 7 Cosey, 2,091 feet, 25 bbls. oil and unestimated amount of water, pumping. Magnolia Petroleum Co. No. 21 Moore, 2,148 feet, 95 bbls. oil, 105 bbls. of salt water, pumping. Taylor Refining

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Co. No. 5 Brown, 2,163 feet, 36 bbls. oil, 5 per cent water, pumping. Lytton Springs field: Martx & Bevan No. 1 Nix, 1,614 feet, abandoned.

Guadalupe County

Darst Creek field: McCabe & Dabb No. 1 Wilson Yates, 2,454 feet, abandoned. Humble Oil & Refining Co. No. 25-A Denman, 2,551 feet, 22 bbls., open tubing. Dunlap field: H. J. Spiller No. 1 Allen, 2,408 feet, abandoned. Darst Creek field: E. A. Tapp No. 2 W. R. Posey, 2,632 feet, 122 bbls. oil, no water.

Duval County

Casa Blanca field: J. R. B. Moore No. 3 Martin, sand 1,157-63 feet, 102 bbls., pumping. Fred Shields No. 2 Martin, 1,160 feet, 100 bbls., pumping. Eagle Hill field: W. E. Butler No. 2 Foster, sand 1,509-24 feet, 63 bbls., pumping. Magnolia Petroleum Co. No. 4 Duval County Ranch Co., sand 1,477-85 feet, 42 bbls., pumping. Fitzsimmons field: Porter Drilling Co. No. 1-B Fitzsimmons, 3,610 feet, 56 bbls. oil and 6 bbls. of salt water, quarter-inch choke. Hoffman field: Cox & Hamon, Gorman and others No. 1 Conway, sand 2,755-58 feet, 100 bbls., jetting. Magnolia Petroleum Co. No. 9 Weil, sand 2,780-92 feet, 5 bbls. per hour, jetting. Lundell field: Humble Oil & Refining Co. No. 52 White, sand 1,525-40 feet, 51 bbls., three-sixteenths inch choke.

Jim Hogg County

Colorado field: K. D. Harrison No. 2 Trevino, 3,013 feet, 75 bbls., quarter-inch choke.

Hidalgo County

Samfordyce field: R. S. Dean No. 1 Guerra, perforated casing 2,665-75 feet, 150 bbls., three-sixteenths inch choke.

Nueces County

Flour Bluff field: Humble Oil & Refining Co. No. 2-B State, 6,655 feet, 160 bbls., eighth-inch choke. West Saxet field: Renwar Oil Co. No. 13 Harrington, 3,867 feet, 41 bbls. in eight hours, 5/32-inch choke. Luby field: Seaboard Oil Corp. No. 10 Schaeffer, 5,064 feet, 130 bbls., eighth-inch choke. Stanolind Oil & Gas Co. No. 10 Spessard, perforated casing 4,347-52 feet, 68 bbls. in 16 hours, eighth-inch choke. Clara Driscoll field: O. W. Killam No. 6 Ellick, 5,470 feet, 144 bbls., quarter-inch choke. Richard King field: Southern Minerals Oil Co. No. 10 King, perforated casing 4,013-15 feet, 500,000 feet of wet gas, eighth-inch choke. Saxet field: Maryland Corp. and Renwar Oil Corp. No. 7 Rand Morgan, perforated casing 4,862-66 feet, 116 bbls. in 15 hours, jetting. West Saxet field: Rand Morgan No. 8-C fee, perforated casing 3,852-60 feet, 121 bbls., 5/32-inch choke.

Jim Wells County

South Alice field: R. Bowles No. 1 Ragland, perforated casing 5,260-67 feet, 136 bbls., eighth-inch choke. H. H. Howell No. 10 Lindsay and Reed, perforated casing 5,270-5,305 feet, 162 bbls., eighth-inch choke.

Medina County

Dunlay field: Brewer & Thurmond No. 1 Riff, 805 feet, abandoned.

Refugio County

Tomoconnor field: Copano Oil Co. No. 4 O'Connor, 5,920 feet, 595 bbls., quarter-inch choke; No. 7 O'Connor, 5,915 feet, 601 bbls., quarter-inch choke. Quintana Petroleum Co. No. 4 Heard, 5,930 feet, 780 bbls., quarter-inch choke.

San Patricio County

East White Point field: Plymouth Oil Co. No. 1-D Cole, 5,660 feet, 137 bbls., 7/64-inch choke. Texas Co. No. 1 Owens, perforated casing 5,654-58 feet, 116 bbls., eighth-inch choke.

Webb County

Aviator field: Nelson & Wise No. 1 Bruni, 2,172 feet, abandoned. Killam field: M. E. Morton No. 1 Laurell Brothers, 2,071 feet, temporarily abandoned. Achning & Scheig No. 1 Garcia, 1,603 feet, abandoned. W. H. Appell No. 1 Laurel Brothers, 2,548 feet, abandoned.

Zapata County

Charco Redondo field: Bob Richey No. 1 Martinez, 995 feet, abandoned. Escobas field: Texas Co. No. 118 Measles, 1,293 feet, 25 bbls., pumping. Transwestern Oil Co. No. 13-E Trevino, 1,276 feet, 12 bbls., pumping.

Victoria County

Telferner field: Western Petroleum Co. No. 2 Wagner, perforated casing 2,513-16 feet, gas well, making some salt water.

N. Y.-Penna. Gas Fields

COUDERSPORT, Pa., Aug. 22.—There were no completions in the New York-Pennsylvania deep sand gas fields during the past week but there were four new locations and a number of wells are nearing completion.

The new locations were all staked by G. L Cabot, Inc., on the: Elmer Downey farm, 260 feet from the west farm line and 240 feet north of the state line, in West Union Township, Steuben County; George Hotaling farm, 780 feet from the north and 850 feet from the west farm lines, in Woodhull Township, Steuben County; Frank Raymond farm, midway east and west and 540 feet from the north road, in Bingham Township, Potter County. Emma Elliott farm, 187 feet from the south and 92 feet from the east lines, in Harrison Township, Potter County.

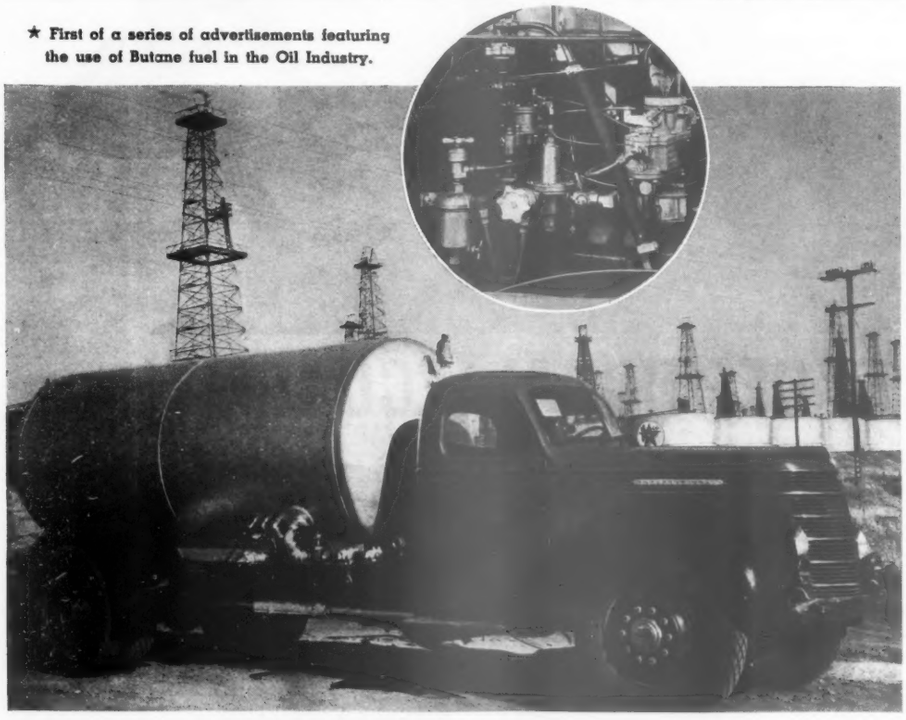
The wildcat test of Wasson and others on the E. S. Collins farm in Howe Township, Forest County, was reported to have drilled through a thin, 5-foot streak of Oriskany sand without finding production. Whether or not this well will be drilled deeper has not been announced. It found the top of the Onondaga at 5,130 feet.

Another interesting wildcat, that of Updegraph on the O. E. Erickson farm in Elk Township, Warren County, is in the Red Medina and will be drilled on to the White Medina. The top of the first sand was at 5,415 feet where the well was reported drilling.

Williamsport Oil & Gas Co. is drilling at 5,294 feet on the U. B. Russell farm in Sharon Township, Potter County. This well, a wildcat, reached the Onondaga at 5,171 feet and the top of the chert from 5,248 to 5,253 feet. In other Potter County operations, G. L.

(Continued on Page 97)

★ First of a series of advertisements featuring the use of Butane fuel in the Oil Industry.



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North and East Texas

By
D. H. STORMONT

K.M.A. Outposts Encourage; New Tests in Eastern Texas

WICHITA FALLS, Tex., Aug. 22.—Several possible extensions to the K.M.A. field of Wichita County and a new location for the Hull-Silk pool of northern Archer County were features in North Texas over the past week. In Wilbarger County, 3½ miles west of the K.M.A. field, Target Drilling Co. No. 1 Waggoner, Section 27, Block 6, H.&T.C. Survey, was drilling below 4,374 feet and believed nearing the top of the Ellenburger. This wildcat topped the K.M.A. lime pay at 3,920 feet and drilled into lime showing oil from 4,138 to 4,200 feet, from 4,210 to 4,225 feet, and from 4,367 feet to its present drilling depth.

A new wildcat was staked southeast of K.M.A. when Carey & Carey located No. 1 J. A. Kemp in Section 3, Block 59, S.P. Survey, about 2½ miles southeast of the nearest production in the field and about the same distance from the recently discovered Canyon sand pool in the southern part of the county. Panhandle Refining Co. No. 1 Jerome Stone, Floyd Jordan Survey, Abstract 167, 1,000 feet southeast of the Shell Petroleum Corp. and Phillips Petroleum Co. No. 1 Reilly, which extended the pool 3 miles west, was plugged back to 3,847 feet to shut off bottom-hole water and shot with 14 quarts from 3,820-25 feet. The test is cleaning out, but another 100-quart shot is planned before production attempts are made.

Archer County

Second new test for the Hull-Silk pool of northern Archer County in as many weeks was staked by Reno Oil Co. as its No. 1-D L. F. Willson. Itl is in Block 24 in the southwest extension area and is a south offset to the Reno Oil No. 10 Wilmont, which extended the 3,800-foot pay about 2 miles southwesterly.

Panhandle Refining Co. No. 1 Prideaux, A. Rohus Survey, in the extreme southeastern part of Archer County, is drilling below 4,320 feet after passing up several good showings to complete its contract depth of 4,750 feet.

Grayson County

The Collinsville area of western Grayson County received a set back when Mildred Oil Co. No. 1 Neathery, south of Sherman, recovered salt water on an initial production attempt. Sand had been found at 3,973-89 feet and was believed to be sufficiently saturated to make a commercial producer, however, on a 10-minute test, 350 feet of water was recovered. It is undecided whether the test will be carried deeper or abandoned at its present total depth of 4,035 feet.

Clay County

Walter H. Gant No. 1 B. Edwards, S. C. Belden Survey, wildcat 6 miles east of Henrietta is North Texas' deepest drilling well as it continues to make hole below 6,165 feet. The test has passed through several zones showing oil, but all have failed to show on drill stem tests.

NORTH TEXAS COMPLETIONS

(24-hour gauges)

Cooke County

A. D. Robinson No. 18 J. H. Otto A, 1,204-34 feet, 1,500,000 feet of gas. Schermerhorn Oil Co. No. 17 Mary Kessler, 1,324-57 feet, 31 bbls. Texas Co. No. 4 F. J. T. Trubenbach B, 918-31 feet, 28 bbls.; No. 2 Tony Trubenbach, 1,209-1,372 feet, 22 bbls. Trumter Oil Co. No. 1 Frank Trubenbach, 815-23 feet, 81 bbls.; No. 2 Frank Trubenbach, 802-18 feet, 20 bbls.

Jack County

Champlin and others No. 2 S. M. Mantooth, 3,241-3,269 feet, 450 bbls. R. H. Dearing & Son No. 1 John R. Touchstone, 3,196 feet, dry. W. R. Dearing and others No. 1 G. L. Jones D, 3,275 feet, dry; No. 1 A. B. Kuykendall, 2,920-3,126 feet, 230 bbls.; No. 2 A. B. Kuykendall, 2,955-3,120 feet, 393 bbls. G. C. Gilmore No. 7 William Hanna, 446 feet, dry. A. T. Gray and J. W. Kendrick No. 2 M. Covington, 403 feet, dry. Gwynn & Overby No. 1 J. E. Henderson, 2,703-2,863 feet, 5,000,000 feet of gas. Hunter and others No. 4 M. Covington, 377-97 feet, 2 bbls. E. Sewell No. 3 D. R. Sewell, 290-305 feet, 15 bbls. J. B. Sneed & Co. No. 3 J. M. Bloodworth, 308-28 feet, 26 bbls.

Foard County

Olin P. Burnham No. 1-A T. L. Ward, 2,362 feet, dry.

Wichita County

L. T. Burns No. 24 Waggoner Brothers, 3,812-3,921 feet, 120 bbls. Cable Oil Co. No. 29 J. E. Roller, 327 feet, dry. Chapman & McFarlin No. 6 Sparks & Mayfield, 3,880-3,916 feet, 492 bbls. Consolidated Oil Co. No. 9 W. P. Ferguson, 3,713-3,840 feet, 1,720 bbls. Continental Oil Co. No. 1-B Waggoner D, 3,790-3,830 feet, 480 bbls. Dorian & Mitchell No. 3 Sue Mitchell, 3,841-98 feet, 960 bbls. J. E. Farrell No. 2 N. H. Martin, 3,783-3,860 feet, 500 bbls. A. P. Kouri No. 1 Martin B, 3,679-3,770 feet, 250 bbls. N. H. Martin & Son No. 1 Wichita County Mineral Rights, 3,778-3,867 feet, 504 bbls.

W. B. Omohundro No. 7 W. L. Hodges, 3,799-3,867 feet, 880 bbls.; No. 30 J. R. Pace, 3,665-3,861 feet, 816 bbls. Palmer & Chenault No. 11 S. M. McCarty, 3,791-3,871 feet, 540 bbls. Petroleum Producers Co. No. 89 First National Co., 110 feet, temporarily abandoned location; No. 91 First National Co., abandoned location. Rathke Oil Co. No. 16 T. L. Burnett, 700 feet, dry. H. W. Roberts No. 2 R. L. Kempner, 3,794-3,875 feet, 1,860 bbls. Sam K. Viersen No. 1 R. L. Kempner Tisserand, 3,775-3,841 feet, 300 bbls. White & Duncan No. 16 K. T. Goetze, 1,992 feet, dry.

Wilbarger County

T. L. Moore Drilling Co. No. 1 Mrs. G. E. Blackman, abandoned location. Paradise Oil Co. No. 2 W. T. Waggoner, 1,874-1,891 feet, 202 bbls.

Young County

S. D. Glover No. 4 H. W. Hennig, 1,312 feet, dry. W. G. Horn No. 4 W. B. Gegg, 728-36 feet, 10 bbls. George E. Kesterson, Jr., No. 3 Nora 'R. Rinch, 730 feet, dry. Pemeta Oil Co. No. 8 J. L. Jordan, 695 feet, dry. A. T. Strong No. 1 Williamson, 3,842-3,940 feet, 2,000 bbls. O. L. Swanson No. 1 W. B. Cheeves, 1,030 feet, dry. Underwood Drilling Co. No. 31 R. Campbell C, 905 feet, key well; No. 32 R. Campbell C, 896-900 feet, 5 bbls.; No. 33 R. Campbell C, 997 feet, dry. E. D. Willis No. 1 G. P. Stewart C, 850 feet, dry. W. G. Wootten and others No. 1 R. B. Drum, 595 feet, dry.

EASTERN TEXAS FIELDS

DALLAS, Tex., Aug. 22.—The Flag Lake pool in northwestern Henderson County received a new outpost location when Texas Co. staked No. 1 Tarkington in the W. K. Newell Survey, about a half mile southwest of the company's abandoned No. 2 Nolen, approximately three-quarters of a mile southwest of the south extension area.

At Navarro Crossing in Houston County, Humble Oil & Refining Co. have staked another test after the abandonment of No. 1 C. C. Hill. The new test is No. 1 J. A. Hill, in the La Riviere Survey and is about 1,000 feet west of the failure. The abandoned No. 1 C. C. Hill checked high on the base of the Austin chalk, but penetrated a thick section of shale and ran low into water in the Woodbine sand.

Humble Oil & Refining Co. and Gulf Oil Corp. are drilling below 4,300 feet in their No. 1 Horton, a deep lower Marine test in the H. G. Hudson Survey, and about 4 miles southwest of Longview. It is about a mile and a half south of the same company's No. 1 Robertson, which was drilled to 10,284 feet and plugged back. It made a small producer in the Glen Rose.

In the Titus County portion of the Talco field, Magnolia Petroleum Co. has a new outpost which will seek the lower Glen Rose should the regular producing Paluxy horizon of the pool prove barren. It is No. 3 Chapman and is about 2,000 feet southeast of No. 1 Chapman, a failure after drilling to 5,900 feet. The new test was last reported drilling below 1,595 feet.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Angelina County

B. L. Hoffman No. 1 Jones, 2,050-67 feet, 24 bbls.

Franklin County

In the Talco field, V. A. Hughes No. 1 W. E. Haydon, dry and abandoned at 4,324 feet. Humble Oil & Refining Co. No. 59 King, 4,270-84 feet, 24 bbls.

Freestone County

In the Cayuga field, Amerada Petroleum Corp. No. 6 H. Beck, 4,008-27 feet, 183 bbls. Carter-Geogg No 1-A Harwell, 4,008-34 feet, 191 bbls.

Navarro County

V. T. Fearis No. 1 Montgomery, dry and abandoned at 3,761 feet.

Rains County

Parsons-Andree No. 1 Glass, dry and abandoned at 4,240 feet.

Trinity County

Gassage No. 1 Elliott, abandoned.

EAST TEXAS FIELD COMPLETIONS

(One-hour tests)

Gregg County—Longview Area

General American No. 26 J. G. McGrede, 3,608-17 feet, 40 bbls. I. G. & S. Oil Co. No. 13 F. Smith, abandoned location. Stanolind Oil & Gas Co. No. 13 F. Smith, 3,530-80 feet, 39 bbls.; No. 3-C T. Snoddy, 3,523-77 feet, 53 bbls. Sinclair Prairie No. 21 J. T. Lodden, 3,651-60 feet, 56 bbls.

Gregg County—Kilgore Area

H. E. Exun Tr. No. 9 Ed Mitchell, 3,583-99 feet, 60 bbls. Gold Star Oil Co. No. 2 J. T. Butts, 3,531-49 feet, 45 bbls. Gulf Oil Corp. No. 38 G. W. Culver, 3,545-65 feet, 54 bbls. Magnolia Petroleum Co. No. 43 John Radford, 3,678-79 feet, 65 bbls. B. F. Carroll No. 2 City of Kilgore, 3,537-58 feet, 20 bbls. Shell Petroleum Corp. No. 84 J. B. Watson, 3,560-70 feet, 48 bbls.

Rusk County—Kilgore Area

J. C. Cook No. 1 J. R. Irion, 3,699 feet, dry and abandoned. H. W. Donnell No. 2 F. Buckner, 3,793-94 feet, 8 bbls. Humble Oil & Refining Co. No. 182 L. D. Crim, 3,580-82 feet, 80 bbls.; No. 183 L. D. Crim, 3,591-92 feet, 65 bbls. R. E. L. Silvey No. 3 Beasley, 3,849-50 feet, 22 bbls.

Rusk County—Joiner Area

Atlantic Refining Co. No. 18-A L. J. Pinkston, 3,614-3,729 feet, 50 bbls. Blackwell Oil & Gas No. 8-B Stone,

(Continued on Page 111)

Oklahoma Operations

By
DAL DALRYMPLE

Extend Wilzetta Pool South; Large Tillman County Well

Early completion was scheduled for Indian States Oil Co. and others No. 1 Bailey NW NW NE Section 2-12-5e, outpost one-half mile south of the Wilzetta pool in Lincoln County, Okla., and about 2 miles northeast of the South Wilzetta pool. At total depth of 4,240 feet in lime, it went dead after flowing 18 bbls. of oil, but was revived by swabbing and flowed 182 bbls. in 18 hours. Operators were epxected to run tubing and test the Hunton lime zone at 3,233-4,240 feet.

Olson Oil Co. and associates No. 1 Vanek, SE SW NE Section 4-12-3w, pool opener south of Britton in Oklahoma County, showed an increase in production while being deepened. It averaged 9 or 10 bbls. of oil an hour at 6,766 feet, with 2,100,000 feet of gas daily. After deepening 4 feet, oil averaged 10½ bbls. an hour, with gas gauging 4,000,000 feet. Oil flow had increased to 15 bbls. an hour and gas to 4,500,000 feet at 6,772 feet. Deepening was to continue until base of second Wilcox sand, topped at 6,717½ feet, was found or water intruded.

Revival of an old area northeast of Bristow in Creek County was indicated at T. P. McAdams and others No. 1 Fast, NE NE SE Section 36-17-9e, where operators were testing Dutcher sand at 2,712-13 feet. Oil rose 1,000 feet in the hole when sand was entered, and when 5 3/16-inch casing was run, the well made a flow and was shut in for tankage and pipeline connections. Location is 9 miles northeast of Bristow.

Indian Territory Illuminating Oil Co. and Foster Petroleum Co. No. 1 Garnett-Goodman, NW NW SE Section 1-3s-19w, Frederick area, Tillman County, flowed 723 bbls. of oil in 6 hours and 10 minutes and was shut in. Production was from Canyon lime at 3,128-37 feet, total depth. Gravity of the oil was said to be 40 degrees. It was estimated good for more than 2,500 bbls. of oil daily, making it the field's biggest producer. Production of the other 5 wells in the pool ranges from 250 to 500 bbls. daily.

Wildcat Operations

Helmerich & Payne and others No. 1 School Land. SW SE SW Section 16-28-1w, pool opener northwest of the Blackwell district in Kay County, was completed for daily potential of 1,320 bbls. of oil. It topped first Wilcox sand at 3,530 feet, second sand at 3,603 feet, was bottomed at 3,645 feet, set 2-inch tubing at 3,630 feet and flowed 660 bbls. of oil in 12 hours.

Crawford and others No. 1 Voehl, SE SE NW Section 34-27-2w, wildcat in Kay County, was moving in machine for a 2,000-foot test.

Superior Oil Corp. No. 1-A Loula, NE SE SW Section 16-22-1e, Noble County wildcat, was location for a Layton sand test.

Carter Oil Co. and others No. 1 Smith, C SE SW Section 26-5n-8w, was location for an 8,000-foot wildcat oil test in the old Chickasha gas field in Grady County. Farm name of the well previously was announced incorrectly as No. 1 Farrell.

Burke-Greis Oil Co. No. 1 Goodman, NE NE SW Section 20-14-7, wildcat in Creek County, was drilling below 1,247 feet.

Hall & Briscoe No. 1 Merkle, NW NW SE Section 32-8-5, Pottawatomie County wildcat, was a rig.

F. W. Cooper Drilling Co. No. 1 Samuel, NW SE NE Section 19-6-8, Seminole County wildcat, had dug cellar and pits. It was to be a Wilcox sand test.

Community Oil Co. and others No. 1 Hay, SE SE SW Section 33-21-2w, an old wildcat in Noble County, was dry and abandoned at old total depth of 5,408 feet after operators failed to lower the salt water after bailing down to 4,800 feet.

Pottawatomie County

Three new producers were completed and three old wells were recompleted in the St. Louis field, Pottawatomie County. Alma Oil Co. No. 3 Curley, NW SW NW Section 33-7-5, found dolomite at 4,018 feet, total depth 4,041 feet, was acidized and pumped 290 bbls. of oil and 300 bbls. of water in 24 hours.

J. F. Smith No. 1 Miller, NW NW SW Section 22-7-4, had second Calvin sand at 3,234-40 feet, total depth, and swabbed 176 bbls. of 42-gravity oil and 7 bbls. of water initially.

Same operator's No. 3 Hines, SE SE NE Section 21-7-4, had Calvin pay at 3,176-84 feet, total depth, and pumped 90 bbls. of oil and 2 bbls. of water daily.

Texas Co. No. 1 Lynn, SE cor. Section 20-7-4, an old well, was plugged back from 4,198 feet to 3,750 feet, acidized and pumped 70 bbls. of oil in 24 hours. Westheimer and others No. 4 McGee, SW SW NE Section 23-7-4, an old well, was plugged back from 4,226 feet to 3,478 feet, perforated casing and flowed 35 bbls. of oil and 10 bbls. of water daily. Magnolia Petroleum Co. No. 6 Billington, SW NW NE Section 22-7-4, an old well, was plugged back from 3,498 feet to 3,050 feet, but was dry and abandoned.

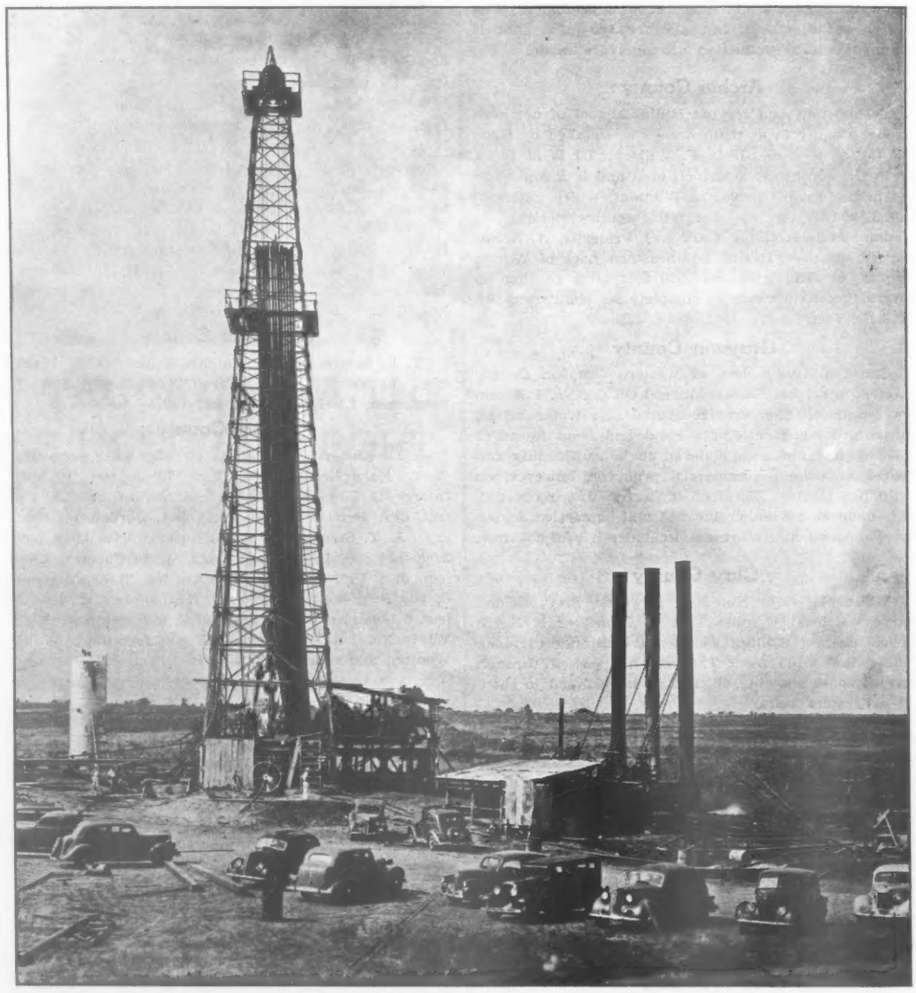
New work in Pottawatomie County: Atlantic Refining Co. No. 1 Spangy, SW SE NW Section 6-6-4, location; same company's No. 1 Harris, NE NW SW Section 6-6-4, location; C. A. Palmer No. 1 Pappan, SE SW SE Section 16-7-4, spudded; F. C. Fall, Inc., No. 1 Lawrence, NE SW NE Section 29-7-5, spudded; Robertson and others No. 2 Johnson, NW NE SW Section 29-7-5, rig; J. E. Trigg No. 1 Rhodd, NE SE SE Section 32-7-5, location; same operator's No. 2 Vanselaus, NW NE SE Section 32-7-5, drilling below 3,160 feet; same operator's No. 3 Vanselaus, SE NE SE Section 32-7-5, moving in tools.

Lincoln County

Wilcox Oil & Gas Co. No. 16 Sac and Fox, SE NE SW Section 15-14-6, Sac and Fox pool, Lincoln County, had Prue sand at 2,921-3,038 feet, total depth 3,042 feet, was shot and flowed 65 bbls. of oil in 24 hours.

Same company's No. 15 Sac and Fox, NE SE NW Section 15-14-6, flowed 66 bbls. of oil in 24 hours from Prue sand at 2,916-3,012 feet, total depth 3,016 feet.

Wilcox Oil & Gas Co. No. 3 Fitch, SE NW NE Sec-



Olson Oil Co. and others No. 1 Vanek, Oklahoma County wildcat, has opened a new pool south of Britton

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USE 'INCOR'—for wells of moderate depth, and low temperatures.

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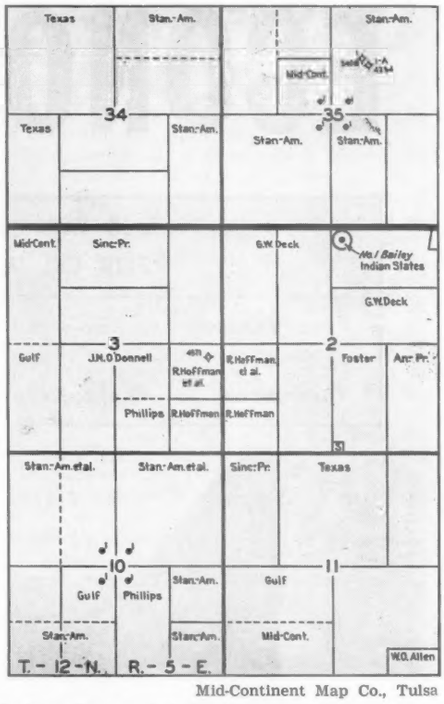
tion 15-14-6, topped Prue sand at 2,930 feet, was bottomed at 3,011 feet, flowed 40 bbls. of oil in 24 hours through casing, with gas estimated at 1,500,000 feet.

Jones Associated Oil Co. No. 3 Wray, SE cor. Section 10-14-6, flowed 64 bbls. of oil in 24 hours after shooting. Prue sand was topped at 2,900 feet, total depth 3,001 feet.

Four new tests in the Sac and Fox area were reported: Mudge Oil Co. No. 1 Maddox, SE NE SE Section 9-14-6, location; Wilcox Oil & Gas Co. No. 8 DeLozier, NW SW SW Section 10-14-6, had Prue sand at 3,053 feet, total depth 3,060 feet, waiting on standard



Mid-Continent Map Co., Tulsa

Indian States Oil Co. No. 1 Bailey, outpost between the Wilzetta and South Wilzetta pools, Lincoln County, was showing for a Hunton lime producer

tools; same company's No. 6 DeLozier, SE NW NW Section 15-14-6, Prue sand 2,920 feet, total depth 2,924 feet, rigging up standard tools; same company's No. 7 DeLozier, SW NE NW Section 15-14-6, drilling at 818 feet.

Pontotoc County

W. A. Delaney No. 3-A Horn, SW NW NW Section 23-2n-7, Fitts district, Pontotoc County, had lower McAlester pay at 1,307-39 feet, total depth 1,345 feet, was shot and pumped 48 bbls. of oil in 24 hours.

Sinclair Prairie Oil Co. No. 2 McCarty, SW NW NE Section 22-2n-7, an old well, was plugged back from 3,915 feet to 2,135 feet, ripped casing and pumped 50 bbls. of oil in 24 hours.

Simpson & Roodhouse No. 2 Breco, NE SW SW Section 21-2n-6, set surface casing at 61 feet.

Creek County

Comail Oil Co. No. 1-A Barnes, SE cor. Section 18-17-8, Creek County, had a hole full of water in Prue sand at 2,470-91 feet, total depth, and was abandoned.

Johnson Oil Refining Co. No. 1 Wright & Cantrell, NE NE SW Section 25-18-9, had Arbuckle lime at 3,345-3,493 feet, total depth, and was dry and abandoned.

The following new activity in Creek County was reported: Whitfield & Bailey No. 1 Harjo, NW SW SW Section 26-14-10, drilling at 1,400 feet; L. B. Jackson No. 1-A Bittle, SE NW NW Section 11-15-10, drilling at 1,100 feet; Dundee Pipe & Supply Co. No. 5 Beaver, NW NW NE Section 4-17-12, location; Jake Glenn No. 1-B Tiger, CNL N half SW Section 17-17-7, drilling at 650 feet; J. E. Crosbie, Inc., No. 11 Escoe, NW SE SW Section 26-18-8, fishing at 655 feet; Gled Oil Co. No. 7 Escoe, NW SE SE Section 27-18-8, an old well deepened from 1,325 feet to 2,636 feet, cleaning out; Bryan Petroleum Co. No. 1 Healey, SE SE NE Section 26-18-9, spudded; Klingensmith Oil Co. No. 1 Burgess, NW NW NE Section 36-18-10, drilling at 900 feet; Big

Four Petroleum Co. No. 1-A Grayson, SW SW SE Section 13-19-7, drilling at 665 feet.

Okfuskee County

Prince & Anderson No. 4-A Radford, C NW SE Section 35-11-11, Okfuskee County, was dry and abandoned in salt sand at 1,697-1,727 feet, total depth.

Mid-Continent Petroleum Corp. No. 3 Ireland, SE NW SW Section 10-13-10, Okfuskee pool, Okfuskee County, had Wilcox sand at 3,450 feet, total depth 3,466 feet, was shot and swabbed 100 bbls. of oil in 24 hours, later pumping 105 bbls. of oil and 18 bbls. of water daily.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending August 20, and for the preceding week, was as follows:

	Barrels	
	Aug. 20	Aug. 13
Allen	5,800	5,750
Billings	4,000	4,250
Burbank	6,925	7,250
South Burbank	9,650	9,950
Balance Osage	17,250	17,500
Blackwell district	4,450	4,175
Bristow-Slick	6,725	8,800
Chandler	1,825	1,750
Crescent	3,875	3,500
Cromwell	3,025	3,150
Cushing-Shamrock	9,675	9,750
Duncan district	4,125	3,650
Edmond	5,250	5,025
Fish	2,925	2,675
Fitts	39,250	42,275
Jesse	2,675	1,975
Graham	3,775	4,200
Gray	975	725
Healdton	7,925	8,050
Hewitt	3,650	3,975
Keokuk	4,125	4,300
Konawa	1,400	1,150
Lucien	7,725	7,375
Moore	4,800	4,675
Oklahoma City	123,250	116,475
Olympic	4,975	5,175
Ramsey	1,600	1,650
Sasakwa	1,450	1,100
Sholem-Alechem	2,375	2,425
Seminole district:		
Bowlegs	7,325	7,100
Carr City	3,100	3,000
Dora	4,100	4,350
Earlsboro	4,200	3,875
South Earlsboro	500	475
East Earlsboro	4,175	4,750
Little River	6,750	6,250
East Little River	825	800
Maud	600	525
Mission	1,350	1,300
Seminole	6,150	6,500
East Seminole	1,625	1,535
Searight	2,100	2,375
Total Seminole	42,800	42,835
St. Louis-Pearson	20,125	19,750
Tatums	2,975	3,250
Tonkawa-Garber-Thomas	4,100	4,100
Wewoka	2,325	2,250
Yale-Jennings	3,675	3,700
Other pools	71,950	70,990
Total Oklahoma	443,400	439,575

Oklahoma County

S. L. Clum and others No. 1 Gilleland, SE SW NW Section 15-12-3w, Oklahoma City pool, Oklahoma County, had dolomite at 6,445 feet, total depth 6,515 feet, flowed 970 bbls. of oil in seven hours, settled down to 58 bbls. an hour and was completed for potential of 1,390 bbls. daily. Gas was estimated at 10,000,000 to 15,000,000 feet daily.

Indian Territory Illuminating Oil Co. No. 4 Bodine-Anderson, NW NE NW Section 30-11-2w, topped Pawhuska zone at 3,010 feet, total depth 3,017 feet, and pumped 555 bbls of oil in 24 hours.

Osage County

D. B. Mason No. 7 Osage, SW NW SE Section 3-24-12, Osage County, was dry and abandoned at 1,611 feet, total depth.

Sidwell Drilling Co. and Indian Territory Illuminating Oil Co. No. 457 Osage, NE NW SW Section 27-24-11, an old well, was deepened from 1,731 feet to Arbuckle lime at 2,023-29 feet, total depth, and produced 2,250,000 feet of gas. Indian Territory Illuminating Oil Co. No. 216 Osage, SW SE Section 8-26-11, an old well, was deepened from 1,892 feet to 2,190 feet, plugged back to 1,960 feet, and produced 750,000 feet of gas.

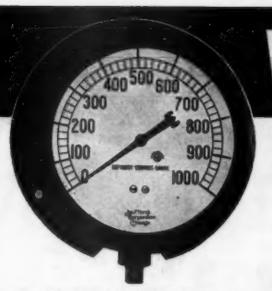
Sidwell Drilling Co. No. 7 Osage, SE NE NW SW Section 27-24-11, was a location.

Pawnee County

M. P. Thomas No. 2-A Ackley, SE SW SE Section 14-20-9, Pawnee County, had Layton sand at 1,208-63 feet, total depth, plugged back to 1,256 feet, and pumped 37 bbls. of oil and 35 bbls. of water daily.

Comail Oil Co. No. 2 Zackafoose, Section 23-20-9,

(Continued on Page 110)



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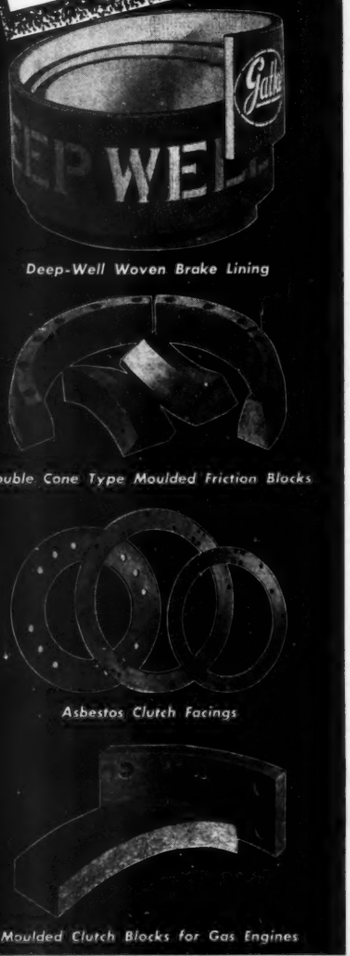

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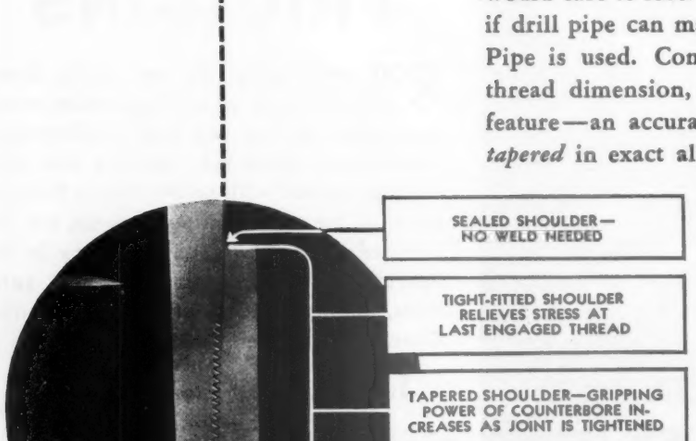
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North Louisiana, Arkansas

By GEORGE WEBER

2 Wells Will Test Opposite Limits of Shreveport Field

SHREVEPORT, La., Aug. 22.—A temporary ruling on spacing around the new Shreveport discovery well and within the city limits, promised several days ago by the Louisiana Department of Conservation, is still awaited with great interest by North Louisiana operators. The most recent request from a Shreveport delegation is that the spacing regulations be withheld until a few more wells have been drilled to determine the extent of the producing area.

This possibility became a reality, when Superior Oil Corp. of Tulsa and F. W. Martin of Shreveport jointly announced plans for a new wildcat about 6 miles southeast of R. E. Allison No. 1 Ellerbe, and completely across the city limits of Shreveport. Location will be on a 623-acre tract belonging to Andrew Querbes in Township 17, Range 13. Also about 5 miles westward across the south end of Shreveport, preparations are being made by J. E. Smitherman and others on a block of leases around the old Steere airport. M. W. Grimm's 3,250-acre block east of Cedar Grove has been transferred to the Arkansas Fuel Oil Co. for drilling, the first well to be started not later than November 10.

The Atlas Pipe Line Co. (controlled by Lion Oil Refining Co.) is now digging up its old 4-inch pipe line running near the discovery well to the Atlas' refinery at Jewella in order to examine its condition. Reports are that Atlas will purchase the crude.

North Louisiana

In the Carterville area of Webster Parish, Magnolia Petroleum Co. No. C-1 Pardee, Section 17-13-11, reached a total depth of 6,025 feet in the Pettitt lime, topped at 5,920 feet. The hole is being reamed down for drill stem test. The lower Marine Trinity was the original objective of this deep wildcat test in the old Carterville gas field.

South Arkansas

The Arkansas Board of Conservation issued notice of a hearing on August 22 at El Dorado for the purpose of considering whether waste of crude oil or natural gas is taking place in the state, or is 'reasonably imminent" under present proration practices. The flush Buchner, Village, Rodessa and Schuler fields will receive most of the attention at this hearing.

During the week Lion Oil Refining Co. completed the sixty-seventh oil producer in the Jones sand at Schuler. No dry holes have yet been drilled in this horizon. The new completion, No. 3 Marcus, SWC Lot 5 NW Section 18-18-17, flowed 70 bbls. hourly. A continued program of activity at Schuler by Lion was indicated when that company completed a loan of $3,200,000 recently 'for further development of the Schuler oil field."

In the Village field, Fohs Oil Co. No. 1 Phillips, Section 15-17-19, showed as a small producer on drill stem test, testing about 50 bbls. daily. The well is a southwest offset to the discovery. As a west offset to the discovery well, Standard Oil Co. No. 1 Crumpler, shot casing at 7,474 feet and was running a cement retainer to perform another squeeze job in an effort to shut off bottom water.

NORTH LOUISIANA COMPLETIONS
(24-hour tests)

Bienville Parish

De Soto Oil & Gas Co. No. 2 W. A. Ashley, abandoned location.

Bossier Parish

Premier Investment Co. No. 52 Wyche, total depth 435 feet, 25 bbls.

Caddo Parish

C. H. Giddens No. 1-A State Levee Bd., total depth 1,029 feet, 40 bbls. Mid Field Oil Co. No. 6 Muslow, total depth, 1,060, 40 bbls. Nat Wiseman No. 3 Stiles, total depth 1,705 feet, dry and abandoned.

Caldwell Parish

G. W. Zeign No. 14 La. Cent. Lumber Co., total depth 1,760 feet, dry and abandoned.

Claiborne Parish

Lyons & Neeley No. 1 Kolgore, total depth 5,427 feet, 180 bbls. Prairie Oil & Gas Co. No. 2 S. Lloyd, total depth 5,356 feet, 50 bbls.

Estimated Production

Estimated daily gross production all companies week ending August 19, 1938:

NORTH LOUISIANA

	Bbls.
Bellevue	580
Caddo light	4,065
Caddo heavy	2,400
Converse	555
Cotton Valley heavy	100
Cotton Valley light	*10,100
De Soto & Red River	1,370
Elm Grove	335
Haynesville	3,295
Holly	70
Homer	2,610
Lisbon	10,615
Pleasant Hill	100
Rodessa	34,990
Sarepta-Carterville	†515
Sligo	1,440
Sugar Creek	295
Urania	2,740
Zwolle	2,600
Total North Louisiana	78,775

SOUTH ARKANSAS

Buckner	1,245
Champagnelle	1,060
El Dorado	1,840
Lisbon	270
Miller County	375
Nevada	635
Rodessa	6,635
Schuler	22,395
Smackover light	2,060
Smackover heavy	16,045
Stephens	560
Troy	1,220
Urbana	1,175
Village	255
Total South Arkansas	55,770

Texas side of Rodessa field 30,550 bbls. daily.

*3,040 bbls. is distillate. †235 bbls. is distillate.

La Salle Parish

Placid Oil Co. No. 6 Louisiana Lumber Co., total depth 1,851 feet, dry and abandoned.

Lincoln Parish

H. Fotiades No. 2-B M. Patton, total depth 5,386 feet, 384 bbls. Magnolia Petroleum Co. No. 1 S. L. Fuller, total depth 5,371 feet, 50 bbls.

Morehouse Parish

Southern Carbon Co. No. 22 Tennessee Delta Lumber Co., total depth 2,190 feet, 3,690,000 feet gas. Union Production Co. No. 3 Tennessee Delta Lumber Co., total depth 2,190 feet, 3,500,000 feet gas.

Natchitoches Parish

Roy Rains No. 1 Prudential Insurance, total depth 1,250 feet, dry and abandoned. W. P. Ryan No. 1 Lambert, total depth 4,160 feet, dry and abandoned.

Sabine Parish

Richards & Holloway No. 1 Bauer, total depth 2,375 feet, dry and abandoned. Richards & Holloway No. 1 Bowman-Hicks Lumber Co., abandoned location.

Union Parish

Union Production Co. No. 103 fee, total depth 2,165 feet, 9,500,000 feet gas.

Webster Parish

Hunt No. 1 M. F. Davis, total depth 5,969 feet, 40 bbls.

SOUTH ARKANSAS COMPLETIONS
(24-hour tests)

Columbia County

Fohs Oil Co. No. 1 Phillips, total depth 7,378 feet, 125 bbls. Standard Oil Co. of Louisiana No. 3 McKean, total depth 7,257 feet, 25 bbls.

Union County

Atlantic Refining Co. No. 1 Rogers, total depth 7,599 feet, 1,389 bbls. E. M. Jones No. 2 Rogers, total depth 7,660 feet, 50 bbls. Phillips Petroleum No. 4 Marks, total depth 7,700 feet, 410 bbls.

Miller County

Estabrook & Hill No. 1 Sherman, total depth 6,330, dry and abandoned.

Lafayette County

Standard Oil Co. of Louisiana No. 1 Warren, total depth 7,245 feet, 30 bbls.

EAST TEXAS BORDER COUNTIES

In the Jefferson area of Marion County, testing for new areas along the Rodessa fault system, Arkansas Fuel Co. No. 1 Johnson, was plugged back from 6,132 to 6,125 feet in an effort to shut off salt water which appeared on drill stem tests of the Dees horizon, where formerly oil saturation had been logged. Testing of this well continues.

N. Y.-Penna. Gas Fields

(Continued from Page 90)

Cabot, Inc., is shut down at 4,866 feet on the West Bingham Grange farm in Bingham Township and New York State Natural Gas Co. is drilling at 3,145 feet on the L. E. Hanes farm in Harrison Township.

New York State Natural Gas Co.'s test on the L. Dickerson farm in Gaines Township, Tioga County, found the Oriskany unproductive at 5,396-5,407 feet and was reported drilling at 5,408 feet. G. L. Cabot, Inc., is reported drilling at 1,080 feet on the Flora Bell Joy farm, Brookfield Township, this county.

McKenry and others are still cleaning out at 4,772 feet in their wildcat on the Stellman farm in Rockland Township, Venango County.

Van Gelder and others got a 40,000-foot show of gas, low in the Onondaga, in their test on the J. O'Hara farm, Willing Township, Allegany County. The Onondaga was topped at 4,689 feet and the Oriskany at 4,727 feet where the well is now shut down for casing. Empire Producing Co. is drilling at 3,576 feet on the Floyd Wilson farm, Penn York at 2,575 feet on the Cyrus Wilson farm and Belmont Quadrangle Drilling Co. is shut down after spudding in on the Hilligas No. 2 farm, remaining Willing Township operations. The latter is also drilling at 413 feet on the A. H. Billings farm, Independence Township.

G. L. Cabot, Inc., is bailing water at 3,578 feet in its test on the Gibson farm, Woodhull Township, Steuben County. Its location on the Charles Crane farm remains inactive.

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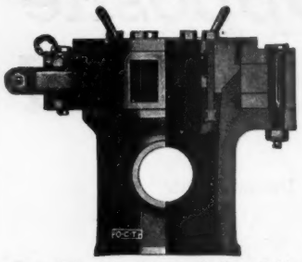

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Among the Drilling

TAUBERT & McKEE, Fort Worth contractors, are drilling an important wildcat in southwestern Cooke County, North Texas. It is their No. 1 Alexander, Thomas Clevinger Survey. The test will be carried to 2,200 feet unless production or salt water is encountered at a lesser depth. Taubert & McKee are also drilling two wells on contract in the Bryson field of Jack County. No. 1 Henderson, for the Nelson Oil Syndicate, has been spudded and will seek an extension to production on the west side of the field. No. 1 Bailey, for Danciger Oil & Refining Co., is drilling below 1,401 feet.

TARGET DRILLING CO. is drilling one of the more important wildcat tests in North Texas. It is No. 1 W. T. Waggoner Estate in Wilbarger County, Section 27, Block 6, H. &T.C. Survey, 3½ miles west of the K.M.A. pool of Wichita County. The test is indicating an extension of the prolific Strawn sand producing K. M.A. pool westward into Wilbarger County, and is now coring below 4,250 feet after running an electrical survey to the bottom of the hole. Saturation has been encountered from 4,130-80 feet, however the wildcat continues to core. It is about 1½ miles north of a deep failure on the Waggoner ranch by Lloyd H. Brown, drilled several months ago.

CARTER DRILLING CORP., of Kilgore, is drilling an important wildcat in East Central Texas for John Johnston. The test is No. 1 E N. Speight, A. Varella Survey, about 8 miles south of Mexia in Limestone County. Forty feet of surface casing has been set and operator will begin drilling in the next few days. Contract depth is 3,700 feet and it is being drilled with a gasoline rig.

RICHARDS & HOLLOWAY, of Tyler, prominent contractors in East and East Central Texas, and among the developers of the recently discovered Flag Lake pool of Henderson County, have received contract for a wildcat to be drilled in Henderson County for McElreath & Suggett, Fort Worth operators. It will be No. 1 Lawson Deen, located on a 64-acre tract in the C. M. Walters Survey, in the central part of the county. Contract depth is to the Woodbine sand and operators are now moving in machinery.

BATEMAN DRILLING CO. of Tyler has staked location for a new Cass County, East Texas Border, wildcat outpost to the Lodi portion of the Jefferson pool in Marion County. It will be No. 1 J. A. Jaynes and others, in the Ambors Douthette Survey and near the edge of the Cass County line. This is the first outpost for the Lodi area of the Jefferson pool, which is producing from the basal Glen Rose of the lower Trinity. Contract depth is 6,500 feet, or 50 feet into the Young zone, fourth Rodessa producing horizon.

HARRY L. EDWARDS DRILLING CO. received contract from Speed Oil Co. and others for a 5,500-foot wildcat to be drilled on the August Makowsky lease in the D. McIntyre Survey, Washington County, Texas. Material is being moved in and actual drilling is expected to be started by the middle of the week. It will be drilled 200 feet into the Wilcox formation.

LOFFLAND BROTHERS are reported to have received contract from Texas Co. for an 8,500-foot wildcat test to be drilled on Mustang Island, due east of Corpus Christi and in Nueces County, Texas. The well is on the Sarah E. Little and others lease in the William Little Survey, Abstract 210. Another rig of Loffland Brothers was used in drilling the discovery well of the Bay Baptiste field, Terrebonne Parish, which was completed last week as a distillate well from perforated casing at 11,172-78 feet.

H. M. HARREL is starting a second test in the Bammel field, Harris County, Texas, for George Lawrence and others. The well is on the C. Ehrhardt lease in the H. Simmons Survey, about 3,000 feet from the discovery oiler that was completed several weeks ago.

TRINITY DRILLERS, Inc., of San Antonio completed two producers for Continental Oil Co. and Eagle Hill Oil Co. in the Driscoll and Eagle Hills fields, Duval County, Texas, and report five other operations, two of which are in Jim Wells County for Lewis Production Co. and Transwestern Oil Co,, two in Nueces County for Carlos Oil Corp. and Phillips Petroleum Co., and one in the Eagle Hill field for Eagle Hill Oil Corp.

JACK FRAZIER abandoned his wildcat in Goliad County, Texas, at 5,563 feet. In the Eureka field, No. 4 Vollmer-Neiman was completed for a gas well through perforated casing at 7,720-35 feet, while No. 1 Lackner, an outpost well and a projected 9,500-foot test, is drilling ahead.

SMITH & McDANNALD cored sand in another test for the Tide Water Associated Oil Co. at the Eureka field, Harris County, Texas, and is prepar-

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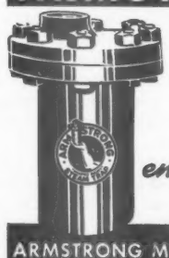

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Contractors

ing for a production test. No. 2-A Lackner, the most easterly well drilled in the field and within a half mile of the Houston city limits, is being recompleted after it tested salt water. Smith & McDannald have spudded No. 1 Rooney, a 6,500-foot wildcat test near the Sandia gas field in Jim Wells County.

JOHN G. MAYO has moved a rig to northeastern Liberty County, Texas, where a Cockfield test on the M. E. Roberts lease in the J. F. De Rumayor Survey is scheduled to be spudded.

CROSBY DRILLING CO. has spudded No. 1 Bertha Graf, a wildcat test in the Sublime area, Lavaca County, Texas.

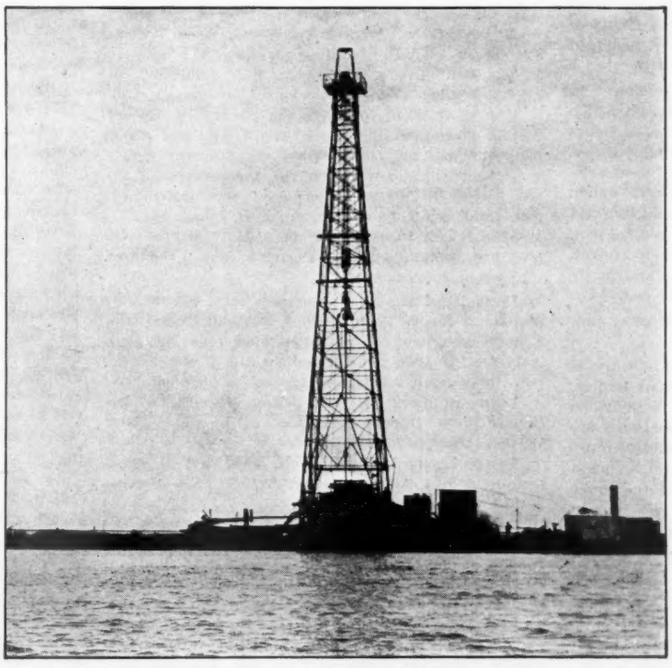
ROWAN & HOPE of San Antonio have cemented casing in No. 1 Cuellar Brothers, a north offset to the discovery well of the Tesoro field in Duval County, Texas. The well is being drilled for themselves and casing was cemented to test the Pettus sand after a drill-stem test at 5,074-81 feet showed several hundred feet of pipe line oil.

JOHN MABEE, Oklahoma drilling contractor, has the contract for a wildcat being drilled in Thomas County, Kan., by Roy Ramsey and Ramsey Petroleum Co. Location is in section 27-8s-32w, northwestern part of the state, on a 28,000-acre block assembled in 1936. Companies interested in the block include Cities Service Oil Co., Gulf Oil Corp. and Skelly Oil Co. Mr. Mabee has an interest in the well and block.

H. M. HARRELL has spudded Ohio Oil Co. No. 1 Cornelius, a wildcat test located north of Markham in Matagorda County, Texas.

W. G. RAY DRILLING CO, INC., of Shreveport, has two rigs active in the Cotton Valley field of Webster Parish, La., drilling for himself and for North American Oil Consolidated Co. A third rig is drilling in the nearby Lisbon field of Claiborne Parish for Gulf Oil Corp.

T & T DRILLING CO. of Corpus Christi, Tex., is preparing to drill a wildcat test about a mile from the nearest production in the McCampbell field, Aransas County.



Large rotary being operated by Trinity Drillers of San Antonio on a wildcat location in Redfish Bay, offshore from Nueces County, Texas. The well is being drilled for Coastline Oil Corp. and a series of drill stem tests are being made in several sands below 8,000 feet. This was the first well to be drilled along the Texas Coast from an artificial island constructed by driving piling and filling in with shell

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Michigan Field Report

By
O. C. PRESSPRICH

Southwestern Counties Add Two Pools to State's Total

SAGINAW, Mich., Aug. 22.—Two wildcat strikes the past week, in Allegan and Van Buren counties, brought with them a new Michigan oil boom, stamping the southwestern part of the state as a field of great potentialities.

The wildcats—each bottomed in the Traverse formation and reported producing about 700 bbls. daily—are Stewart Oil Co. No. 1 H. Oldebekkering, C N half SE SE Section 21-4n-14w, Allegan County, and Fisher-McCall Trust's No. 1 M. Wiggins Estate, SE SW SE Section 9-1s-14w, Van Buren County. The two wildcat strikes are about 20 miles apart.

Five hundred oil men and others from Grand Rapids, Detroit, Mount Pleasant, Muskegon and elsewhere in the state were present when the Wiggins well, down 1,220 feet, flowed oil 20 feet above ground when it came in Thursday. Capped and pinched in, it flowed steadily at a 50-bbl.-an-hour rate. The oil is being taken by the Naph Sol refinery at Muskegon, which also has installed pipe lines to handle the Oldebekkering well's flow.

Bloomingdale Discovery

The discovery in Bloomingdale Township, Van Buren County, served to accent anew the enthusiasm of oil men over the Overisel well, which came in Tuesday with a show almost identical with that in the neighboring county. It was shut in after several hours because of inadequate storage facilities. It is bottomed at 1,456 feet, about 235 feet deeper than the Fisher-McCall well.

While others feverishly sought acreage, the Michigan Devonian Petroleum Co., Saginaw, was among those in the lead, with an offset 40 acres diagonally adjacent and about 200 acres hard by. That firm, the Muskegon Development Co. and the Smith Petroleum Co. were reported to have preparations under way to begin drilling.

Turner Petroleum Co. No. 1 White, a wildcat in SE NE NW Section 28-16n-3w, Isabella County, which flowed approximately 100 bbls. in less than 24 hours last week after a 250-gallon acid shot, presaged a new field also for Isabella County. The well had been a 20-bbl. natural producer and was to receive a 750-gallon acid treatment. After swabbing about 30 bbls., the test was drilled deeper, but encountered water at 3,723 feet, and was plugged back 11 feet before the first treatment. Others operators with holdings in the vicinity apparently are awaiting final acid results at the Turner test.

The Turner well is about 5 miles from older production.

Continuing to hold the interest of the industry is the state's deepest test, Sun Oil Co. No. B-1 State-Jerome, SW SW NE Section 9-15n-1w. It now is in the Sylvania at 5,069 feet, with a slight show of oil. Operators are preparing a plug-back and contemplate a shot of nitroglycerin. The plug-back will be to 5,035 feet. A previous oil show was logged at 4,642 feet in the lower Monroe (Detroit River formation), which was topped at 3,830 feet. The Dundee was reached at 3,672 feet. The test has been observed closely for weeks as the Sylvania sand was approached.

Gladwin County

T. F. Caldwell No. 3 Hostetler, NW SE NE Section 27-18n-1w, rated 135 bbls. after acid.

R. King No. 1 LaFurgey, NW SE NE Section 20-17n-2e, filled with oil after acid treatment. Pyramid Oil Co. No. B-1 Mabel Lake, NW SE SE Section 20-17n-2e, was to be drilled in this week. Operations had reached the Dundee stratum.

Michigan Wildcats

J. H. Fisher and S. L. McCall, Trustees, No. 1 M. Wiggins Estate, SE SW SE Section 9-1s-14w, Red Rock 580-96 feet, Antrim 1,015 feet, Traverse 1,178 feet, pay 1,221 feet, flowed 15 bbls. while casing.

Louis Rose No. 1 Peters Estate, SE NW SW Section 11-1s-13w. Traverse lime 1,436 feet, show oil 1,436½ feet, Monroe 1,700 feet, drilling 2,025 feet.

W. H. Thouriby No. 1 Vlietstra, NW NE SW Section 31-1s-11w, Red Rock 888-92 feet, 920-25 feet, 950-55 feet, Antrim 1,316 feet, Traverse 1,496 feet, Traverse lime 1,550 feet, hole full of water 1,565 feet, total depth 1,571 feet, dry and abandoned.

Whitehill & Drury No. 1 Ament & Webster, C S half NE SW Section 35-2s-16w, location.

Premier Oil Co. No. 1 Munson, NE NE NE Section 9-2s-12w, rig.

R. E. Leatherman No. 1 Scheffler, SE SW NW Section 26-3s-8e, Trenton 2,830 feet, small showing of oil 2,960 feet, shut down 2,960 feet.

Guy M. Obenauer No. 1 Neel, SW NW SW Section 6-5s-14w, Traverse lime 1,083 feet, show black oil at 1,085 feet, hole full of water 1,235 feet, total depth 1,240 feet, dry and abandoned.

R. D. Olmstead, Trustee, No. 1 Frink, SW SE NE Section 25-5s-6e, old well drilling deeper, show gas 2,650-52 feet, shut down 2,800 feet.

United Petroleum Co. No. 1 Low, SW SW SW Section 24-1n-15w, Traverse lime 1,208 feet, shut down 1,210 feet.

Miller Brothers-W. Spencer Cook No. 1 Wood, SE NE SW Section 3-1n-12w, Red Rock 775-804 feet, 860-68 feet, Antrim 1,260 feet, Traverse 1,435 feet, Traverse lime 1,498 feet, oil showing 1,504 feet, shut down.

Archie M. Henry No. 1 Honeysette, SW SW NE Section 27-1n-11w, Traverse 1,435 feet, shut down 1,477 feet.

Muskegon Development Co. No. 1 Todd, NW SE SW Section 24-2n-16w, drilling at 552 feet.

The Daily Crude Oil Co. No. 1 A. Anderson, SW SE NE Section 17-2n-15w, spudding.

Roy L. O'Brien No. 1 Matilda Raber, SW SW SE Section 36-2n-13w, Red Rock 772-75 feet and 810-22 feet, Antrim 1,238 feet, drilling at 1,350 feet.

Hubbell Oil Producing Co. No. 1 MacVean, SE SW NW Section 19-2n-11w, Dundee 1,803 feet, water 1,635 feet, total depth 1,860 feet, dry and abandoned.

Associated Development Co. No. 1 Natzel, NW NW SW Section 4-2n-9w, Traverse lime 1,840 feet, shut down 1,845 feet.

Darke Brothers No. 1 Royston farm, SE SE NW Section 23-2n-1w, Traverse lime 2,196 feet, gas show 2,248-50 feet, hole full of water 2,260 feet, gas show 2,411 feet, Dundee 2,468 feet, hole full of water 2,495 feet, total depth 2,510 feet, dry and abandoned,

Darke Brothers No. 1 O'Sullivan, NE SE NW Section 28-2n-1w, Dundee 2,448 feet, sulfur water 2,466-73 feet, shut down 2,505 feet.

Vester Leonard Oil Co., Inc., and Paul E. Glendenning No. 1 Albert Koning, SW NE NW Section 35-3n-16w, material on ground.

Lester A. Shimmel, Trustee, No. 1 Saugatuck Depositors Corp., NE SE SE Section 28-3n-15w, driving 10-inch at 263 feet.

K. G. Nilsen No. 1 Willys Lampen, SE NE SE Section 3-3n-14w, location.

Ernest Snyder, Agent, No. 1 Van Liedekerke, NW NW NW Section 17-3n-13w, Red Rock 882-913 feet, Antrim 1,373 feet, Traverse 1,594 feet, Traverse lime 1,643 feet, show oil 1,643 and 1,650 feet, total depth 1,660 feet, dry and abandoned.

Hugh Heinig and Norton Stewart Petroleum Corp. No. 1 Pushel, SW SW SE Section 23-3n-13w, Red Rock 951 feet, drilling at 992 feet.

W. C. Sewell, Trustee, No. 1 Arbanas, NW SW SE Section 8-3n-11w, drilling at 200 feet.

Stewart Oil Co. and others No. 1 Oldebekking, C N SE SE Section 21-4n-14w, Red Rock 762-69 feet, Antrim 1,266 feet, Traverse 1,410, Traverse lime 1,477 feet, pay 1,478-78½ feet total depth, 30,000 feet of gas at 1,478 feet, N.I.P. 20 bbls. per hour, pinched.

N. A. Trexler and A. E. Williams No. 1 B. Yonkers, SE SW SE Section 25-4n-14w, drilling at 1,090 feet.

Northcott No. 1 Dowling, NW NE SW Section 27-4n-13w, Antrim 1,450 feet, total depth 1,550 feet, shut down.

Fred H. Gilde No. 1 Harry Lampen, NW NE NW Section 32-4n-13w, drilling at 600 feet.

Leighton Oil & Gas Co. No. 1 Wiggins, NW NW NE Section 15-4n-11w, moving on ground.

Collin & Soper No. 1 Simmons Estate, SW NW NW Section 3-4n-10w, Coldwater Red Rock 1,265-73 feet, drilling at 1,315 feet.

New Haven Oil & Gas Syndicate No. 1 Schultz, SE NE SE Section 22-4n-14e, Traverse from 278 feet, fishing 304 feet.

Joe Victor, Trustee, No. 1 Scott, NE NE SE Section 20-5n-15w, old well drilling deeper, old total depth 714 feet, Red Rock 716-34 feet, 738-54 feet, Antrim 1,320 feet, shut down 1,476 feet.

Walter F. Newhouse No. 1 Henry P. Zwemer, NE NW NW Section 25-6n-16w, rigging up.

C. P. McDonald, Trustee, No. 1 Koeppen, C E half SE SE Section 19-6n-3w, drilling at 670 feet.

T. K. Buzard No. 1 McCall, C W half SW NE Section 11-6n-3e, Sunbury 1,360 feet, Berea 1,376 feet, show gas and water 1,394 feet, shut down 1,525 feet.

Huronic Oil Co. No. 1 Adam May, SW SW NW Section 4-6n-17e, correction, Traverse 190 feet, shut down 275 feet.

Fletcher Carscallen, Trustee, No. 1 Copp, SW NE SW Section 9-8n-15w, moving on ground.

R. B. Somerville and others No. 1 Bowman, SE SW SE Section 19-7n-14w, Marshall 171-78 feet, hole full of water 171-78 feet, drilling 190 feet.

Byron McCollum and George F. Herr No. 1 Story, SE SW SW Section 32-7n-12w, rigging up.

Black River Gas & Oil Development Co. No. 2 Ida May, SW SE SE Section 32-7n-17e, S.G.W. 118 feet, shut down 120 feet.

Fletcher Carscallen No. 1 William Copp, SW NE SW Section 9-8n-15w, material on ground.

William A. Comstock, Trustee No. 1 Donovan, SW NE SE Section 4-8n-9w, Traverse 2,460 feet, hole full water, drilling 2,610 feet.

F. Irwin Bryan (Bryan Development Co.) No. 1 Graham, SW NW NW Section 11-8n-16e, shut down 385 feet.

Rex Oil & Gas Co. No. 1 Harry Cheney, NW SW NE Section 11-9n-5w, driving 10-inch 140 feet.

Ralph I. Hether-Alfred Appel No. 1 Foster, NE NE SE Section 26-9n-12e, Sunbury 1,155 feet, Berea 1,225-1,315 feet, hole full water 1,255 feet, shut down 1,365 feet.

Rex Oil & Gas Co. No. 1 Hanson, SE SE NW Section 19-11n-8w, Traverse 2,821 feet, show oil 2,846-53 feet, S.S.O. 2,893 feet, salt water 2,895 feet, drilling 3,010 feet.

Edwin C. Meredith and Thomas P. Rau No. 1 Foundry Sand Supply Co., C NE NW Section 32-11n-8e, Traverse 2,040 feet, water 2,145 feet, running 5-inch 2,580 feet.

H. F. Solomonson and J. G. Turner No. 1-A A. L. Jack Estate, Section 7-12n-9w, Dundee 3,251 feet, swedging 5-inch, bottom hole 3,261 feet.

Michigan Chemical Corp. No. 9 fee, SE SW NW Section 24-12n-3w, Dundee 3,386 feet, water 3,389 feet, black water 3,489-94 feet, drilling 3,705 feet.

Rowmor Corp. No. 1 Weidman, N half NE SW Section 26-13n-5w, Berea 2,541-48 feet, drilling 2,906 feet.

Stork Oil Co. No. 1 Steger, NW NW SW Section 23-15n-2e, rig.

(Continued on Page 110)

Rocky Mountain Area

By T. R. INGRAM

Lea County Pool Extensions Only Feature of a Dull Week

DENVER, Colo., Aug. 22.—An unusually dull week marked developments in the northern Rocky Mountain area.

In Colorado there were no completions or new operations. One well was abandoned in Routt County on account of a crooked hole and the rig was skidded to a new location.

Wyoming had no completions and two new locations, one by the Continental Oil Co. in Lance Creek and the other by Paul Boether in Washakie County.

The Glacier Production Co. No. 3 State, Cut Bank field, Montana, was completed for 140 bbls. first 24 hours. There were two new locations in Cut Bank. Kevin-Sunburst had one completion in A. E. Crumley & Son No. 13 Fryberger, which pumped 150 bbls. first 24 hours.

Nebraska reported two new operations getting under way.

NEW MEXICO

A probable west extension of the south end of the Vacuum field of Lea County, southeastern New Mexico, was indicated at one outpost the past week, while another test apparently was limiting the producing area on the southeast.

Texas Co. No. 1-S State, C NW SW Section 35-17-34, gave promise of extending the field three-fourths mile westward at the south end. It topped anhydrite at 1,555 feet, datum of plus 2,471 feet, which compares favorably with producers to the east. Operators were drilling ahead in anhydrite.

Helmerich & Payne and Continental Oil Co. No. 1-G-36 State, C NW SW Section 36-17-35, three miles southeast of Vacuum production, was checking low structurally on the first formation marker, indicating a possible limitation of the pool. It found anhydrite at 1,610 feet, datum of plus 2,331.

A sizeable producer was completed on the southeast edge of the pool at Phillips Petroleum Co. No. 8 Santa Fe, C NW NW Section 5-18-35. It had pay at 4,344 feet, total depth 4,637 feet, and flowed 227 bbls. of oil naturally through tubing in 15 hours. It was acidized with 1,000 gallons and flowed 196 bbls. of oil through tubing-choke in 8 hours.

Another good producer in the southeast part of the field was completed at Shell Petroleum Corp. No. 1-D State, C SW SW Section 31-17-35. It flowed 320 bbls. of oil naturally through tubing in 6 hours, accompanied by 1,180,000 feet of gas. Pay was found at 4,340 feet and it was bottomed at 4,690 feet.

Texas Co. No. 2-R State, C NW NE Section 6-18-35, was the third completion of the week in that general sector of the Vacuum field. It found pay at 4,540 feet, total depth 4,675 feet, and had natural flow of 21 bbls. of oil an hour through choke.

A new producing area was opened at Texas Co. No. 1 Corbin Permit, C NW SW Section 10-18-33, wildcat about 8 miles west and 1½ miles south of the Vacuum pool. It topped lime pay at 4,258 feet, total depth 5,118 feet, plugged back to 4,319 feet, was shot and pumped 43 bbls. of oil daily. It pumps off in 8 hours.

Other completions in Lea County were: Warren L. Todd and others No. 1 Lemon Permit, C NE SW Section 17-21-32, wildcat in western part of the county, was abandoned at 4,608 feet, total depth, on Delaware sand, with 3,500 feet of salt water in the hole. Sand was topped at 4,460 feet, with first water found at 4,250 feet, above the sand.

Continental Oil Co. No. 1-A-29 Jack, NE cor. Section 29-34-37, had pay at 3,525 feet, total depth 3,595 feet, was shot and flowed 22 bbls. of oil in 2 hours through choke.

Magnolia Petroleum Co. No. 2 Brunson-Argo, C NE NE Section 9-22-37, Hardy sector, topped pay at 3,630 feet, total depth 3,726 feet, and had natural flow of 110 bbls. of oil in 10 hours through tubing.

Culbertson & Irwin No. 1 Dabbs, NE NE NW Section 35-25-37, flowed 69 bbls. of oil daily through tubing from pay topped at 3,205 feet, total depth, 3,331 feet.

Same operator's No. 1 Henry, CN½ NW SW Section 26-25-37, had pay at 3,265 feet, was bottomed at 3,330 feet, and flowed 137 bbls. of oil naturally in 24 hours through tubing.

Maljamar Oil & Gas Co. No. 4 Mitchell, C NE NE Section 20-17-32, Baish-Mitchell district, had initial daily yield of 80 bbls. of oil, through tubing. Top of pay was 4,070 feet, total depth 4,097 feet.

Shasta Oil Co. No. 2 Woolworth, NE NW NW Section 28-24-37, found pay at 3,505 feet, total depth 3,597 feet, was shot and flowed 620 bbls. of oil in 24 hours.

Southern Petroleum Exploration Co. No. 3 Downes, C NE SW Section 32-21-37, Hardy area, found pay at 3,690 feet with best pay at 3,722-78 feet, total depth, was acidized, and flowed 65 bbls. of oil in 9 hours, through choke. Gas gauged 220,000 feet.

Stanolind Oil & Gas Co. No. 5-B Myers, C NE SW Section 9-24-37, Maddix sector, topped pay at 3,324 feet, was bottomed at 3,610 feet, and had initial production of 7,950,000 feet of sweet gas.

One Eddy County well was completed at Rudco Oil & Gas Co. No. 5 Yates, C NE NW Section 33-18-28. It pumped 6 bbls. of oil daily through tubing from pay topped at 2,726 feet, total depth 2,759 feet.

Lea County

Addison Oil Co. No. 3 Knight, C NE NW Sec. 27-24-37. Drlg. 2,715 ft.

Anderson & Prichard No. 3 Carlson-Harrison, SE NW SE Sec. 22-25-37. Drlg. 355 ft.

Anderson & Prichard No. 2 Stuart, SW SW NW Sec. 11-25-37. Drlg. 1,126 ft.

Anderson & Prichard No. 3 Wells, C NE NW Sec. 5-25-37. T.D. 1,210 ft.; set 9⅝-in. csg.

Cities Service and Repollo No. 3 Brunson, C SW SE Sec. 4-22-37. T.D. 3,740 ft.; tstg.

Continental Oil Co. No. 2 Britt B-15, C W½ SW NW Sec. 25-20-37. Drlg. 3,347 ft.

Continental Oil Co. No. 1 Hawk B-6, NW NW SE Sec. 6-21-37. Loc.

Continental Oil Co. No. 1 Myer B-31, C NW SW Sec. 31-20-38. T.D. 1,370 ft.; set 7⅝-in. csg. 1,347 ft.

Continental Oil Co. No. 6 Reed, NE SW SE Sec. 23-20-36. T.D. 3,750 ft.; set 5½-in. csg. 3,661 ft.

Continental Oil Co. et al No. 1 State G-36, C NW SW Sec. 36-17-35. Loc.

Continental Oil Co. No. 1 State I-7, NE NW NE Sec. 7-17-34. Set 7-in. csg. 4,385 ft.; drlg. plug.

Continental Oil Co. No. 1 State A-36, C SE SE Sec. 36-20-37. T.D. 1,380 ft.; set 7⅝-in. csg. 1,378 ft.

Continental Oil Co. No. 1 State K-29, C SW SW Sec. 29-16-37. Drlg. 5,217 ft.

M. J. Delaney Drlg. Co. No. 1 State, C SE NW Sec. 30-17-35. Loc.

Getty Oil Co. No. 3-F State, C NW NW Sec. 36-17-34. Drlg. 3,120 ft.

Great Western Prod. Co. No. 1 Leonard, C SE NE Sec. 32-23-37. Drlg. 3,092 ft.

Great Western Prod. Co. No. 1-C State, C NE SW Sec. 7-19-37. T.D. 4,081 ft.; P.B. 4,070 ft.; pmp. 17 B.O.P.D.; tstg.

Gulf Oil Corp. No. 1 Alley, C NE SE Sec. 10-23-37. T.D. 3,713 ft.; C.O.

Gulf Oil Corp. No. 4 Day, SE SW NW Sec. 6-22-36. Drlg. 2,550 ft.

Gulf Oil Corp. No. 2-E Mattern, C NE SW Sec. 1-22-36. T.D. 305 ft.; rng. csg.

Helmerich & Payne and Continental Oil Co. No. 1-G-36 State, C NW SW Sec. 36-17-35. Drlg. 1,780 ft.

Humble O. & R. Co. No. 6 Fopeano, C NE NE Sec. 35-20-36. Drlg. 2,480 ft.

Humble O. & R. Co. No. 1-I State, C SW SW Sec. 19-17-35. Cellar and pits.

Magnolia Pet. Co. No. 2 Corrigan, C SE SE Sec. 33-21-37. Drlg. 2,830 ft.

Magnolia Pet. Co. No. 1-L State, C SE SW Sec. 21-17-35. Drlg. 4,245 ft.

Magnolia Pet. Co. No. 13 State-Bridges, C SW NW Sec. 25-17-34. Drlg. 4,372 ft.

Magnolia Pet. Co. No. 14 State-Bridges, C SW NE Sec. 25-17-34. Drlg. 3,889 ft.

Magnolia Pet. Co. No. 15 State-Bridges, C SW SE Sec. 26-17-34. Drlg. 3,110 ft.

Maljamar O. & G. Co. No. 10 Baish, C SW NW Sec. 22-17-32. Drlg. 4,034 ft.

Maljamar O. & G. Co. No. 11 Baish, C NW NW Sec. 22-17-32. T.D. 3,847 ft.; W.O.C.

Maljamar O. & G. Co. No. 5 Mitchell, C NW NW Sec. 19-17-32. T.D. 4,033 ft.; P.B. 4,030 ft.; acd. and swb. 25 B.O.P.D.; R.U. pump.

Maljamar O. & G. Co. No. 1-B State, C SW SE Sec. 16-17-32. Drlg. 3,010 ft.

Jas. A. Mascho No. 2 Cloyd, C SW SW Sec. 20-22-38. T.D. 3,510 ft.; bailing.

G. T. McLaughlin No. 1 Polhamus, NE Sec. 9-24-37. T.D. 3,672 ft.; P.B. 3,643 ft.; shot and S.I.

John Menke No. 1 Alexander, C NW NW Sec. 5-21-37. Drlg. 2,605 ft.

Ohio Oil Co. No. 2 State-McCallister, C NE SW Sec. 25-17-34. T.D. 4,118 ft.; rng. tbg.

Ohio Oil Co. No. 1 State-Warn, C NW NW Sec. 6-18-35. Drlg.

Ohio Oil Co. No. 1 State-Bridges, C NE NE Sec. 20-17-34. T.D. 475 ft.; set 9⅝-in. csg. 466 ft.

Olean Pet. Co. No. 1 Boyd, C NW SW Sec. 23-22-37. Drlg. 1,200 ft.

Olean Pet. Co. No. 1 Ferrell, C NE SE Sec. 22-22-37. T.D. 1,128 ft.; set 8⅝-in. csg.

Parker Drlg. Co. No. 1-A State, C SW SW Sec. 21-22-37. Drlg. 1,350 ft.

Penrose & Rowan No. 1 Christmas, SE cor. Sec. 28-22-37. T.D. 3,690 ft.; flows by heads; C.O. 3,665 ft.

Lem Peters No. 1 Coll, NW SW SW Sec. 26-22-37. Drlg. 1,900 ft.

Lem Peters No. 2 L. J. May, C W½ SE SE Sec. 27-22-37. T.D. 3,651 ft.; flwd. 40 B.O. in 1½ hrs.; tstg.

Lem Peters No. 4 L. J. May, SW SE NE Sec. 27-22-37. R.U.S.T.

Lem Peters No. 2 T. O. May, NW NE NE Sec. 34-22-37. Drlg. 585 ft.

Phillips Pet. Co. No. 7 Santa Fe, C SE SW Sec. 27-17-35. T.D. 4,212 ft.; set 7-in. csg. 4,165 ft.

Phillips Pet. Co. No. 9 Santa Fe, C SE SE Sec. 21-17-35. T.D. 4,304 ft.; rng. csg.

Repollo Oil Co. No. 2 Hair, NW SW NW Sec. 9-24-37. T.D. 3,560 ft.; rng. tbg.

Repollo Oil Co. No. 2 Turner, SW NE SW Sec. 29-21-37. T.D. 3,750 ft.; F. 25 B.O.P.D.; acd.

Republic Prod. Co. No. 2 State, C SW SW Sec. 32-17-35. Drlg. 4,225 ft.

Shell Pet. Corp. No. 1-B State, C SE SE Sec. 30-17-35. Drlg. 3,100 ft.

Shell Pet. Corp. No. 1-E State, C SE SW Sec. 31-17-35. Cellar, pits.

Shell Pet. Corp. No. 1-G State, C SE SE Sec. 22-17-34. T.D. 4,420 ft.; set 5½-in. csg.

Shell Pet. Corp. No. 4-H State, W½ NE SE Sec. 13-21-35. Drlg. 1,120 ft.

Shell Pet. Corp. No. 1 Swigart, C NE SE Sec. 25-17-34. T.D. 1,574 ft.; set 8⅝-in. csg. 1,571 ft.

Skelly Oil Co. No. 1 Baker, C SW SW Sec. 10-22-37. Loc.

Skelly Oil Co. No. 6 Baker, C SW NE Sec. 27-22-37. T.D. 1,143 ft.; rng. csg.

Skelly Oil Co. No. 1 J. V. Baker, C SE SW Sec. 22-22-37. O.W.D.D.; drlg. 3,608 ft.

Skelly Oil Co. No. 1-B King, C NE SW Sec. 33-22-37. Cellar and pits.

Skelly Oil Co. No. 1-M State, C SW SW Sec. 32-24-37. Drlg. 775 ft.

Stanolind O. & G. Co. No. 4-B Langlie, C NW SW Sec. 14-25-37. T.D. 3,336 ft.; set 7-in. csg. 3,295 ft.

Stanolind O. & G. Co. No. 5-B Langlie, C SE SE Sec. 9-25-37. T.D. 1,270 ft.; set 9⅝-in. csg. 1,257 ft.

Standard Oil Co. of Texas No. 1 State, C SW NW Sec. 32-17-35. T.D. 4,705 ft.; P.B. 4,649 ft.; est. 10 B.O.P.D.

Sou. Pet. Explo. Co. No. 4 Downes, C NW SW Sec. 32-21-37. Cellar and pits.

Texas Co. No. 3 Black, C NW NE Sec. 21-24-37. T.D. 3,600 ft.; P.B. 3,495 ft.; C.O. at 3,450 ft.

Texas Co. No. 4 Black, C SE NW Sec. 21-24-37. C.&P.

Texas Co. No. 3-A Falby, C SE NW Sec. 8-22-37. T.D. 3,740 ft.; acd.; tstg.

Texas Co. No. 5 Fristoe, NW SE SE Sec. 3-25-37. Drlg. 850 ft.

Texas Co. No. 2 Fanning, C NW NE Sec. 4-26-37. Drlg. 470 ft.

Texas Co. No. 15 Lieu Lands, C SW NE Sec. 20-20-37. R.U.R.

Texas Co. No. 1-N State, CSW SW Sec. 30-17-35. T.D. 4,850 ft.; P.B. 4,693 ft.; drlg. out bridge at 4,250 ft.

Texas Co. No. 2-D State, C SW NW Sec. 27-17-34. Drlg. wtr. well; T.D. 4,860 ft.; acd. and flwd. 1½ B.O. P.H.; R.U. pmp.

Texas Co. No. 3-Q State, C NW SE Sec. 25-17-34. Drlg. 2,818 ft.

Texas Co. No. 1-R State, C NE NE Sec. 6-18-35. Drlg. 4,333 ft.

Texas Co. No. 1-S State, C NW SW Sec. 35-17-34. Drlg. 590 ft.

Tide Water Asso. Oil Co. No. 1-L State, C NE NW Sec. 23-12-36. Drlg. 3,944 ft.

Twin Oil Co. No. 1 Hare, C SE SW Sec. 33-21-37. T.D. 1,203 ft.; set 8⅝-in. csg.

Twin Oil Co. No. 1 Joyce-Pruitt, C SE SE Sec. 31-21-37. T.D. 3,771 ft.; rng. tbg.

Twin Oil Co. No. 2 Corrigan, C NE NE Sec. 4-22-37. Drlg. 3,440 ft.

Carr Drlg. & Expltn. Co. No. 1 State, C SW SW Sec. 22-17-35. Drlg. 4,240 ft.

Two States Oil Co. No. 3-B Cole, C SE NE Sec. 16-22-37. Drlg.

Two States Oil Co. No. 1-B Hill, C NE NW Sec. 5-21-37. T.D. 3,500 ft.; set 5½-in. csg. 3,498 ft.

Two States Oil Co. and Kaseman No. 2-A Hill, C SE SW Sec. 31-20-38. Cellar and pits.

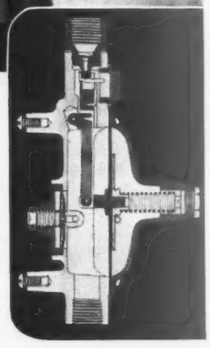
Weier Drlg. Co. et al No. 1 Woolworth, NE NE SW Sec. 28-24-37. T.D. 3,240 ft.; set 7-in. csg.

Weiner No. 1 Parcell, C SW NE Sec. 8-23-28. T.D. 4,498 ft.; S.D.O.

Weiner et al No. 2 Smith, NW SE NE Sec. 4-25-37. Drlg. 540 ft.

For POSITIVE CONTROL of Liquefied Petroleum Gases

The REGO 2400B REGULATOR



The RegO 2400B regulator was developed to meet the specific needs of liquefied petroleum gas systems. (It is NOT an adaptation of old types designed for other uses).

The pressure setting made at the factory permits the installation of the RegO 2400B in either bottled or below-ground tank systems where the anticipated load does not exceed 60 cu. ft. per hour.

FUNCTION

Positive control, with the regulator in any position, covering the full range of tank pressures and delivering accurate and constant outlet pressures, makes the RegO 2400B the "heart" of every system.

CONSTRUCTION

Simple and rugged construction minimizes wear. Diaphragm material has proven its resistance to the action of gas by years of actual field service.

SERVICE

Readily accessible seat and nozzle permits easy replacement in the field without the use of special tools — regulator does not have to be taken apart.

SAFETY

A safety relief valve is built into the regulator as an integral part of the body — permitting the gas to be vented off in the event that pressures in excess of 1 lb. per square inch develop within the regulator.

Write for full details

The BASTIAN-BLESSING Company
288 E. Ontario St.
Chicago, Ill.

Eddy County

Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5-18-27. Loc.
F. E. Baker No. 1 Eddy, NE Sec. 12-22-27. T.D. 2,485 ft.; reaming.
Carper Drlg. Co. No. 1 Day, NE NE NE Sec. 3-19-31. Drlg. 850 ft.
B. Cockburn No. 1 State, C SW NE Sec. 16-18-31. Drlg.
D. & B. Oil Co. No. 3-A Jenkins, SW SW NW Sec. 21-17-30. Loc.
D. & B. Oil Co. No. 3-A Berry, NW SW NW Sec. 21-17-30. Drlg. 1,185 ft.
Dominion O. & G. Co. No. 2 Johnson, C SE NE Sec. 35-16-31. Drlg. 3,100 ft.
Dominion O. & G. Co. No. 3 Johnson, C NE SW Sec. 35-16-31. R.U. machine.
English & Harmon No. 1 Dougherty, NE NE SW Sec. 3-17-27. Drlg. 1,754 ft.
Etz Bros. No. 5 State, SE NE SE Sec. 16-17-30. T.D. 498 ft.; set 8¼-in. csg.
Franklin Pet. Corp. No. 1 McIntyre, NW NE SE Sec. 20-17-30. T.D. 2,500 ft.; S.D. repairs.
Fullerton Oil Co. No. 1-A Johnson, C SE NW Sec. 35-16-31. Coring 3,745 ft.
Fullerton Oil Co. No. 1-A Little, C NE NE Sec. 28-18-31. T.D. 767 ft.; set 10¾-in. csg.
H. A. Hartwell No. 1 Vandagriff, NE NE SE Sec. 8-18-27. T.D. 2,085 ft.; P.B. 2,072 ft.; P. 12 B.O.P.D.; may reacidize.
C. F. Ingram No. 1 Page, NE NE SW Sec. 15-21-28. T.D. 2,400 ft.; S.D. for fuel.
F. G. Keys No. 2 State, C SE NE Sec. 9-17-28. Drlg. 1,318 ft.
Harry Leonard No. 1 Texas, NW NW NE Sec. 36-16-31. Drlg. 3,682 ft.
Martin-Yates No. 1 Bowers, SW SE SE Sec. 31-19-27. R.U. machine.
Peyton Bros. No. 2 Ginsberg, C SE SE Sec. 8-18-31. T.D. 3,185 ft.; flwd. 38 B.O.P.D.; S.I.
Peyton Bros. No. 1 Erwin, C SW SW Sec. 9-18-31. Loc.
Premier Pet. Co. No. 1 Maddren-Beeson, NE SW SE Sec. 28-17-30. Drlg. 830 ft.
Repollo Oil Co. No. 3 Beeson, SE NE SE Sec. 28-17-30. T.D. 1,555 ft.; S.D. repairs.
V. P. Welch No. 1 Lewis, SE SW SE Sec. 5-16-28. T.D. 3,139 ft.; S.D.O.
Western Drlg. Co. No. 2-A Western, SE SE NW Sec. 23-17-29. T.D. 2,687 ft.; set 6⅝-in.; drlg. plug.
Neil H. Wills No. 2 Colglazier, SW SW NE Sec. 20-20-30. Pits.
Neil H. Wills No. 2 Stovall-Wood, SE SE NW Sec. 20-20-30. Drlg. 1,313 ft.
Yates-Dooley No. 1 Creek, C SW NE Sec. 35-18-30. Drlg. 960 ft.

Chaves County

E. J. Fisher No. 1 Foster, C NW NW Sec. 7-15-26. T.D. 562 ft.; W.O.C.
Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. T.D. 20 ft.; R.U.S.T.
Interstate Minerals, Inc., No. 1 Dunigan, NW cor. Sec. 15-15-30. T.D. 2,485 ft.; S.D. for csg.
J. & L. Drlg. Co. No. 2 Hurd, SW Sec. 11-11-26. Drlg. 1,005 ft.

De Baca County

N. F. Woods No. 1 Jones, C NE SW Sec. 17-4n-20. T.D. 190 ft.; S.D.O.
James D. Ward No. 1 Summers, SE NE SW Sec. 15-4n-24e. T.D. 404 ft.; S.D. repairs.

Otero County

Fred Turner, Jr., No. 1 H. V. Everett, SE SE Sec. 28-22-13. S.D. 3,785 ft.; S.D.O.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarito, Sec. 22-9n-1e. Bldg. rig.
Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW Sec. 10-11n-4e. T.D. 3,750 ft.; rng. 6⅝-in. to bttm.

McKinley County

New State Oil Co. No. 1, NE NE NW Sec. 1-17n-9w. M.I.M.
Claude Walker No. 7 fee, SW SW SE Sec. 20-20n-9w. Drlg. 250 ft.

Rio Arriba County

Continental Oil Co.-L. M. Hughes No. 1 Esquibel, unsurveyed; approx. Sec. 1-28n-4e. Drlg. 1,125 ft.
Oil City Pet. Co. No. 1 Azotea, SW SW NE Sec. 11-31n-2e. Spdg.

San Juan County

Continental Oil Co. No. 79 Rattlesnake, C SW Sec. 1-29n-19w. Drlg. 390 ft.
Jack Amenda No. 1, NE NE Sec. 14-29n-13w. Drlg. below 100 ft.
Al Greer No. 2 fee, SW SE SW Sec. 10-30-11w. S.D. 660 ft. for 10-in.
Anna Oil Corp. No. 6 Govt., SW NE NE Sec. 33-30n-11w. S.D. 1,893 ft.

Socorro County

Central New Mexico Oil Co. No. 1 Belen gr., SE NW Sec. 16-3n-1e. T.D. 2,965 ft. (C.D.); C.O.

Torrance County

Drice Co. No. 1 Garland, NE SE NE Sec. 32-7n-7e. T.D. 981 ft.; cmtd. caves 900-954 ft.
Estancia Valley Carbon-Dioxide Dev. Co. No. 1 Crawford, SE NE NE Sec. 32-7n-7e. T.D. 868 ft.; drlg. by tools.

Valencia County

Old Spanish Grants, Inc., No. 1 San Clemente, C SE SW Sec. 23-7n-1e. Drlg.; W.O. rotary.
C. A. Grober et al No. 1 Fuqua, NE NE Sec. 19-5n-3e. T.D. 900 ft.; R.U.R.

COLORADO

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE Sec 18-33n-1e. T.D. 303 ft.; W.O. 10-in.
Pagosa Oil & Dev. Co. No. 1 Macht, C Sec. 32-36-1w. T.D. 1,520 ft. in Mancos sh.; pulling 6-in. to S.R.; S.O. in several stray sds. 1 ft. or more thick.

Elbert County

Plymouth Oil Co. No. 1 Brosky-Union Pacific, C SW SW Sec. 19-10s-60w. Rigged and rdy. to spd.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C NE Sec. 36-

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LUFKIN

TAPES—RULES—PRECISION TOOLS

SAGINAW, MICHIGAN • New York City

7s-88w. S.D.O. 1,245 ft.; failed to S.O.W. at 565 ft. with 8¼-in. at 725 ft. and 6⅝-in. mudded at 875 ft.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE Sec. 2-19s-70w. Drlg. 1,635 ft.

Grand County

Interstate O. & R. Co. No. 1 Hinman, NE SE NW Sec. 11-2n-81w. S.D. 3,920 ft.; will D.D. to Morrison.

Huerfano County

J. G. Tomkins & Sons No. 1 Pressey, NE NE NE Sec. 10-29s-69w. S.D. 411 ft.; (prospecting for coal).
S. W. Pressey No. 2 Alamo, C SW SE Sec. 3-27s-68w. S.D. 1,320 ft.

LaPlata County

N. Spatter No. 1-X Bryce, SE SW SW Sec. 31-33n-9w. Drlg. 1,500 ft.; S.O. 1,285 ft.

Las Animas County

Garcia Corp. No. 1 McClung, NE NW SE Sec. 19-33s-61w. Drlg. 2,253 ft.

Mesa County

Continental Oil Co. et al No. 1 Miller, SW SW NW Sec. 36-8s-91w. Drlg. 6,245 ft.

Moffat County

Morapas Pet. Corp. No. 1 Coles, SW SW SE Sec. 1-3n-92w. S.D. 2,750 ft. for 8¼-in.
C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. S.D. 530 ft.; to run and cmt. 10-in.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW Sec. 31-36s-17w. S.D. 4,720 ft. for repairs.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE Sec. 34-11s-75w. Drlg. 6,050 ft. sh. and shells.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW Sec. 31-21s-44w. T.D. 5,065 ft.; fsg. D.P.

Pueblo County

Eden O. & G. Co. No. 1 Horse Creek, SW SE Sec. 29-19s-64w. Drlg. 235 ft.
C. E. Puckett No. 1 Barber, NW Sec. 35-21s-66w. S.D. 700 ft.; prep. to run 6¼-in.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW Sec. 16-1n-91w. Drlg. 2,625 ft. anhyd.

Routt County

L. C. Craig and E. L. Moore No. 1 Erwin, on Trull Creek, was unable to land 10-inch on bottom at 1,042 feet for water shutoff on account of crooked hole and was plugged and abandoned. Rig was skidded for No. 1-X Irwin, which spudded August 10.

L. C. Craig and E. L. Moore No. 1-X Erwin, C SW NE Sec. 33-7n-85w. Spdg.
Mid-Colorado Pet. Co. No. 1 Omholt, NE NE SE Sec. 29-4n-87w. Drlg. white sd. at 3,140 ft.; top 3,120 ft.
Steamboat Springs Drlg. Synd. No. 1 Brown, C NW NE Sec. 1-6n-86w. T.D. 1,100 ft.; W. in Dakota 1,085-1,100 ft.; prep. to rn. csg.

WYOMING

Big Horn County

A. L. Rankin No. 1 Karjala-Rankin, C SW NW Sec. 10-54n-94w. Cmtd. 8¼-in. 450 ft.; W.O.C.
Prescott & Mileski No. 1 Govt., NE NW SW Sec. 15-1n-93w. Drlg. 820 ft.
Clifford S. Johnson No. 1 Johnson, CEL NW NW Sec. 24-51n-93w. Rig; W.O. engine.
Joan Oil Co. No. 1 Howell, NE NW NE Sec. 32-55n-97w. T.D. 2,420 ft.; fsg.

Campbell County

Frye & Kreiner No. 2, CSL NW NW Sec. 6-50n-72w. T.D. 723 ft.; rng. 5⅛-in. for W.S.O.

Carbon County

Ohio Oil Co.-California Co. No. 5-A Kyle, C NE NW Sec. 26-21n-97w. Loc.
Ohio Oil Co. No. 2-A Baker, NW SW SW Sec. 2-23n-79w. Drlg. 370 ft.
Sinclair-Wyoming Oil Co. No. 3 Mahoney, C SE NW Sec. 34-26n-88w. Cg. 2,620 ft.; top Frontier 793 ft.; Lakota 2,150; Morrison 2,185.
Ohio Oil Co.-California Co. No. 3-A Kyle, C SW NE Sec. 26-21n-79w. Drlg. 7,170 ft.; top Tensleep 7,008 ft.; tstd. 41 B.W.P.H. at 7,008-38 ft.
Producers Oil Co. No. 1 Lake Valley, 200 ft. C of CNL Sec. 14-20n-88w. Drlg. 1,916 ft.

Converse County

Jack Decker et al No. 1 Simonson, NW NE SE Sec. 16-32n-68w. Drlg. 565 ft.
Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. Drlg. 1,500 ft. r.b.
Fred Bunker No. 1 Pestal, SE NE NE Sec. 32-32n-69w. Drlg. 375 ft.
New Era Fuel Co. No. 2 Mary Gasper, CNL NW SW Sec. 25-32n-69w. T.D. 670 ft.; cmtd. 6⅝-in. at 655 ft.
Wyshawn Oil Co. No. 1 Lindley, NW SE SE Sec. 34-32n-69w. T.D. 2,000 ft.; R.U. standard tools; will U.R. 8¼-in. to top Minnelusa.
Wyoming Southern Oil Co. No. 1 Winda, SW NE NW Sec. 6-31n-69w. Loc. (first report).

Fremont County

Lincoln O. & G. Co. No. 1 Shoshone, NW NW SE sec. 23-1s-1e. Drlg. 305 ft.
Tropic Oil Co. No. 1 Govt., C SE SW Sec. 34-27n-90w. T.D. 3,378 ft.; fsg.
Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. Drlg. 1,130 ft.; good S.O. 1,040 ft.
Ben Stewart No. 1 Darnell, NE SE sec. 26-3n-1w. S.D. 2,245 ft. for 7-in.
C. E. Nelson No. 8 fee, CWL NE SW Sec. 27-3n-1w. Drlg. 400 ft.

Hot Springs County

D. D. Gibson No. 22 fee, NE NW SW Sec. 35-43n-94w. Drlg. 1,006 ft.
Italo Pet. Co. No. 1 Skelton-Govt., SE SW NE Sec. 13-44n-98w. T.D. 300 ft.; trying to set 20-in. at 215 ft. for W.S.O.
J. W. Bailes No. 1 Govt., SE SW Sec. 28-43n-93w. T.D. 1,082 ft.; P.B. to 1,015 ft.; tstg.
California Expltn. Co. No. 1 Govt., NE SE NE Sec. 12-44n-97w. T.D. 4,100 ft.; W. in Tensleep; prob. abd.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW sec. 23-21n-117w. Drlg. 865 ft.

Natrona County

General Pet. Corp. No. 1 State, NW NE SE Sec. 16-35n-77w. Drlg. 1,100 ft.; will set 16-in. at 1,200 ft.
Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE SW Sec. 26-40n-79w. T.D. 4,050 ft.; top Tensleep 3,892 ft.; cmtd. 6⅝-in. at 4,060 ft.; tstg.
Stanolind O. & G. Co. No. 8 T.P.-Midwest Oil, C NW SW Sec. 35-40n-79w. Drlg. 880 ft.

Niobrara County

Continental Oil Co. No. 13 Tom Bell, SE NE SE Sec. 33-36n-65w. Loc.
Ohio Oil Co. No. 11 Lamb Acct. 2, SW SE SE Sec. 5-35n-65w. M.I. rot.
Fall River Royalty & Producers Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. S.D. 275 ft. for 15½-in.; top Dak. 265 ft.
Continental Oil Co. No. 3 Apex-3, NW NE NW Sec. 34-36n-65w. Drlg. 4,635 ft.
Continental Oil Co. No. 7-B Schuricht, NW NW SE Sec. 6-35n-65w. Loc.
H. D. Moore et al No. 1 Beregren, NW Sec. 23-35n-63w. Drlg. 1,360 ft.; top r.b. 1,121 ft.
Continental Oil Co. No. 4-A Diehlman, NE NW NE Sec. 8-35n-65w. Loc. (W. offset to Minnelusa Oil Co. No. 1 H. & M.-3).
Adams Oil & Gas Co. No. 1 Baker, NE NE SW Sec. 8-35n-65w. Tent. loc.

Park County

Ohio Oil Co. No. 1 Trans-Ark., CSL SW SW Sec. 30-57n-98w. Drlg. below 6,151 ft.
Valentine & Watson No. 1 Johnson, NE NE NE Sec. 6-57n-99w. T.D. 2,490 ft.; fsg.; 1,300 ft. O.I.H.
Resolute Oil Co. No. 2 State, C SW SW Sec. 16-57n-101w. Drlg. 6,075 ft.
Continental Oil Co. No. 1 Northern Pacific, SE SE NW Sec. 23-58n-98w. Drlg. 2,473 ft.

Sublette County

Frontier Pet. Co. No. 1 Govt., SE SE SW Sec. 1-28-114w. Drlg. 1,500 ft.
Yellowstone Oil Co. No. 1, 200 ft. N of S line of the H. L. Budd ranch, SE SE Sec. 31-31n-112w. S.D. 100 ft.
Wyo. Pet. Co. No. 1 Chas. Budd, C NE NE Sec. 10-29n-113w. Drlg. 480 ft.
Progressive Oil Co. No. 1 Haddenham, C NE SE Sec. 21-28n-113w. Drlg. 832 ft.

Sweetwater County

Sinclair-Wyoming Oil Co. No. 79 Lost Soldier, SE NE NE Sec. 10-26n-90w. Drlg. 510 ft., 10-in. at 47 ft.

Uinta County

Stove Creek Oil Co. No. 1 Govt., C SE NW Sec. 26-14n-119w. Res. at 1,400 ft.
Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26-14n-119w. S.D. 300 ft.

Washakie County

Fison Oil Co. No. 1 Govt., CSL NE SE Sec. 24-47n-90w (Sherard dome). Set 8¼-in. at 116 ft.; W.O.C.
Paul Boether No. 1 Govt. SW NW Sec. 4-47n-90w. R.U. (first report).

Weston County

Updike Bros. No. 1, NE SW NE Sec. 35-46n-64w. M. I.M.
Hugh Updike No. 1, CEL NW SE Sec. 15-46n-64w. R.U.
Federal Oil Co. No. 9, CNL SE SE Sec. 15-46n-64w. Ready to spd.
Des Moines-Osage Oil Co. No. 15, SW SW SE Sec. 30-46n-63w. Cmtd. csg. 1,367 ft.; top of sd.; W.O.C.
Geo. Keisling No. 1, NW NE NE Sec. 35-46n-64w. Set 8¼-in. through Greenhorn at 1,160 ft.; top 1,029 ft.; W.O.C.
Gose Oil Synd. No. 1, NE NE NE Sec. 28-47n-63w. C.O. after landing 4½-in. at 4,900 ft.
West Osage Oil Co. No. 3, SW SE NE Sec. 15-46n-64w. Hd. tight sd. 2,140-54 ft.; will shoot.
John Brorohy No. 1 George, SW SE NW Sec. 26-48n-64w. Drlg. 2,190 ft.; cmtd. 5⅛-in. at 2,090 ft.

MONTANA

Carbon County

R. C. Tarrant No. 2, SE NW Sec. 4-6s-18e. Drlg. 1,925 ft.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW Sec. 35-9s-23e. S.D. 1,810 ft.
R. C. Tarrant No. 2 Heare, NW SE NW Sec. 14-6s-19e. Cmtd. 8¼-in. at 2,335 ft.
Sha-Wa Pet. Co. No. 1 Govt., SW NW NE Sec. 35-9s-23e. S.D. 3,124 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 3-6s-23e. T.D. 2,337 ft. (C.D.): C.O. to res.; will U.R. to bttm. and set csg.

Choteau County

Security Pet. Corp. No. 1 Johnson, C NE Sec. 23-26n-3e. T.D. 1,690 ft.; ran csg. to bttm.; C.O.

Dawson County

Frank C. Hughes No. 1 fee, NW NE SE Sec. 5-14n-55w. Drlg. 1,095 ft.

Daniels County

White Tail Oil & Gas Co. No. 2 Wiley, NW NW NW Sec. 10-36n-50e. T.D. 1,884 ft.; res. under new mngmt.

Fallon County

Montana-Dakota Utilities Co. No. 45-Unit 7, SE NW SW Sec. 15-6n-60e. Drlg. 190 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW Sec. 7-15n-20e. Drlg. 1,120 ft.

Glacier County

Cut Bank had one completion, one near completion and two new operations.

The Glacier Production Co. No. 3 State, NW NE NW Section 16-33n-5w, close to the line between the oil and gas areas, was completed at 2,905 feet and swabbed 140 bbls. first 24 hours after three shots with 7, 10 and 10 quarts at 2,885-2,900 feet. The Sunburst sand was at 2,790-2,868 feet and the Cut Bank at 2,876-2,902 feet. The 7-inch was cemented at 2,860 feet.

The Texas Co. No. 2 Curran, C NW NE Section 8-32n-5w, swabbed 15 bbls. in 24 hours at 2,897 feet from the Cut Bank at 2,948-80 feet. It was then shot with 10 quarts and is cleaning out.

Texas Co. No. 2 Govt., NE NW NE Sec. 17-32n-5w. Loc. (first report).
Par Oil Co. No. 1 Tribal-170, SW NW SW Sec. 7-32n-5w. Bldg. rig. (first report).
Santa Rita O. & G. Co. No. 4 Govt., SE SE SW Sec. 5-32n-5w. Drlg. 250 ft.
K. D. Pardee No. 1 Tribal-179, SE NW SE Sec. 12-32n-6w. T.D. 250 ft.; strtng. hole.
Dr. Peter Potter No. 3 All.-125, NE NW NE Sec. 12-32n-6w. Drlg. 1,700 ft.
Lawler No. 3 Hoerr-Harlan, NE SW SW Sec. 5-33n-5w. Drlg. 600 ft.; Colo. 445; 10¾-in. 475 ft.

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If you belong to the latter group, why not let us show you what you can expect of a JENSEN Unit on YOUR next pumper? You'll be very agreeably surprised.

Glacier Prod. Co. No. 2 Mueller, CSL NE NE Sec. 18-33n-5w. Drlg. 2,005 ft.
A. R. Pardue No. 1 Tribal-171, SE SE SW Sec. 7-32n-5w. Drlg. 2,625 ft.
Santa Rita O. & G. Co. No. 1 State, NW NW SW Sec. 36-34n-6w. Drlg. 2,725 ft.
Santa Rita O. & G. Co. No. 3 Lander, C S½ SE Sec. 16-35n-6w. Loc.
Nadeau Bros. No. 5 Farmers State Bank, CEL SE NE Sec. 17-33-5w. Drlg. 2,710 ft.

Park County

Ben Ryan et al No. 1 Burgess, SE SW NW Sec. 28-2s-11e. Drlg. 1,550 ft.

Petroleum County

Watson Oil Co. No. 1 Austed, SW NW SE Sec. 22-13n-28e. T.D. 445 ft.; W.O. 15½-in.
O. B. Canfield No. 2 Govt., SE NE NE Sec. 21-17-24e. Drlg. 779 ft.

Pondera County

Jones-Chambers No. 1 Erickson, SW SE SW Sec. 3-27n-4w. S.D.O. 1,932 ft. (C.D.); S.O. top Madison followed by wtr.

Teton County

California Co. No. 1 Unit, NE SE SW Sec. 26-27n-9w. Spd. Aug. 12.
Gulf State Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW Sec. 5-27n-5w. Drlg. 3,000 ft.

Toole County

A. E. Crumley & Son had a good completion on the west side of Kevin-Sunburst in their No. 13 Fryberger, CNL NW SE Section 24-35n-3w, which flowed at the rate of 300 bbls. per day after acidizing with 1,600 gallons, and then settled to 150 bbls. per day on the pump. Total depth is 1,610 feet. It had the Ellis-Madison contact at 1,571-72 feet and encountered two more pay streaks in the lime below that horizon. It made 10 bbls. per day naturally before acidizing.

Two wells west of the Kevin-Sunburst field and midway between that area and the Cut Bank field are being watched with considerable interest. One of these is G. H. Lund No. 1 Dahlen, C SE NW Section 35-35n-4w, which was completed last June in the Ellis-Madison contact at 2,056-57 feet. When put on the pump it started off at 5 bbls. per day without being acidized. Two weeks later it was pumping 12 bbls. per day. The following week it showed a trace of water, but no decrease in the oil. Then it was acidized with 2000 gallons. This week it was reported making 8 bbls. of oil and 30 bbls. of water per day.

The Lund well is approximately three-fourths of a mile southwest of Pfabe & Engleking No. 1 Ennerberg, NW SE SE Section 26, the discovery well which gave promise of opening a new pool when it came in last fall flowing 100 bbls. first day of 38.4-gravity oil from the contact after acidizing. At first it showed for a much larger well. Nearly a mile to the northeast of the Pfabe & Engleking well, R. C. Tarrant had sulfur water at 2,019 feet and hole was abandoned, limiting production on the northeast. This was his No. 1 Barkulo, C NW NW Section 35. The Fifty-six Petroleum Co. drilled half a mile northwest of the discovery and had a dry hole.

The other well now attracting attention is the West Kevin Community Lease, Inc., No. 1 McClary, SW NE NW Section 3-34n-4w, 1⅛ miles southwest of the Lund well and in line with the wells drilled on the northeast-southwest trend. Last May it was drilled to contact at 2,105 feet and had 100 feet of oil on top of 1,000 feet of water. Casing was run and hole was deepened to 2,160 feet, where it had 100 feet of oil in the hole. It was acidized with 500 gallons and after standing showed some oil. It started off pumping 300 bbls. of water per day and no oil. A week later it was making 6 to 7 bbls. of oil and 160 bbls. of water per day. After being shut down it started pumping 10 bbls. of oil and 200 bbls. of water per day and the following week was making water only. It was apparent that the pumping equipment was inadequate for a satisfactory test and better equipment was installed. The past week after being idle two weeks it was making 5 bbls. of oil and 200 bbls. of water and the oil apparently was increasing. Interest in the test is due not only to its location in the midway area but to the fact that in the same general district several years ago a water well put to pumping for a prolonged period was made into an excellent oil well.

Big West Oil Co. No. 3 Engle, CSL SW SW Sec. 1-35n-3w. T.D. 1,615 ft.; good S.O. in top Sunburst; swdg. 7-in.
Lion Oil Prod. Co. No. 4 Haugen, NE SE SE Sec. 11-35n-3w. T.D. 1,470 ft.; S.O. 1,739-40 ft.
C. D. Stock No. 3 Haggerty, SE NW SW Sec. 13-35n-2w. Drlg. 1,420 ft.
Kluth et al No. 1 Gunderson, SE SW SW Sec. 18-35n-2w. T.D. 1,643 ft.; contact 1,640 ft.; S.O.; acid.; tstg.
W. M. Cassidy No. 1 Phoenix, CNL NW NW sec. 28-35n-4w. Drlg. 1,100 ft.
Fulton–Commonwealth No. 2 Thompson, NW NE SW Sec. 28-35n-3w. Cmtd. 12½-in. at 95 ft.; W.O.C.
General Oils, Ltd., No. 1 State, SW SE SE Sec 36-35n-4w. T.D. 1,856 ft.; Sunburst 1,590-1,620 ft.; contact 1,853 ft.; acd. second time 500 gals.; tstg.
A. E. Crumley & Son No. 13 Fryberger, CNL NW SE Sec. 24-35n-3w. T.D. 1,610 ft.; pmpg. 10 B.P.D. naturally; will acd. later.
Big West Oil Co. No. 2 Engle, SE SW SW Sec. 1-35n-3w. T.D. 1,602 ft.; sd. 1,573-1,602 ft.; shot 70 qts.; no results; shot again 50 qts.
Montana Gas Corp. No. 2 Clark, C SE SW Sec. 24-37n-1w. T.D. 2,630 ft.; P.B. to 2,140 ft.; blowing well to C.O.
R. G. Parrant No. 1 Engstrom, NW NW NW Sec. 13-35n-3w. Drlg. 720 ft.
Caspen T. Oien No. 8 Engermoen, SW NE SW Sec. 11-35n-2w. T.D. 1,630 ft.; acd. 500 gal.
V. F. Dahl No. 1 Kimball, SW SE SE Sec. 1-35n-3w. Drlg. 1,775 ft.
O. A. Newstad No. 2 Haugen, NW NW NE Sec. 11-35n-3w. T.D. 1,848 ft.; acd. again; no results; C.O. to acid. again.
Pfabe & Engleking No. 2 Hurley, NE NE NW Sec. 8-34n-2w. S.D. 1,456 ft.
H. C. Morton No. 8 Morton, C SW NW Sec. 24-34-2w. S.D. 650 ft.
Chas. Grant et al No. 1 Anderson, SE NE NE Sec. 26-35n-4w. S.D. 2,109 ft.

Yellowstone County

Broadview Dome Oil Co. No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. S.D. 4,565 ft.; to resume.
Riverton Oil Co. No. 1 Fox, CEL NW NE Sec. 14-2n-23e. T.D. 1,795 ft.; U.R. 10-in. to set at 1,650 ft.

UTAH

Grand County

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e. S.D. 1,600 ft.
Crescent Eagle Oil Co. No. 1 Brendel, SW SE Sec. 4-22s-19e. Drlg. 4,010 ft.

Summit County

Mountain Fuel Supply Co. No. 1 Wilde, NE SE SE Sec. 9-2n-5e. Drlg. 4,681 ft.
Longwell Pet. Co. No. 1, SE SW SE Sec. 35-3n-5e. T.D. 2,876 ft.; sdtrkg.

NORTH DAKOTA

Williams County

California Co. No. 1 Kamp, C NW NE Sec. 3-154n-96w. T.D. 10,281 ft.; D.P. stuck.

NEBRASKA

Garden County

Bergman & Bull are reported to have derrick up and moving in rig for test on Section 12-16n-42w, Lewellen district. Location within the section is not yet available.

(Continued on Page 112)

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West, Central and Panhandle Texas

Schleicher's New Gas Field; No Let-down in Wildcatting

By D. H. STORMONT

FT. WORTH, Tex., Aug. 22.—Activity in West and Central Texas continued at its usual pace over the past week, with new locations throughout the basin area and the possibility of a new gas pool for Schleicher County featuring the development in West Texas, while both pool extensions and wildcat wells held attention in West Central Texas.

Yoakum County led the activity in West Texas with a new outpost started in the Denver area and the abandonment of an important test in advance of the Bennett pool. Humble Oil & Refining Co. staked No. 1 Edward Randall in Section 833, as a quarter mile outpost to Gulf Oil Corp. No. 1 Futch, which extended the area a mile to the west several months ago when it was completed for 600 bbls. per day. Gulf No. 1 Moore, a mile and a half west extension to the south end of the Denver area is bottomed at 5,100 feet and has been treated with 1,000 gallons and 3,000 gallons of acid, and was preparing for a third acid treatment of 6,000 gallons. The well flowed 350 bbls. of oil in 24 hours, naturally, before acid treatment was begun and no gauge has been taken since.

J. W. Murchison and Leland Fikes obtained a farmout from Standard Oil Co. of Texas for the drilling of six wells on the west three-quarters of Section 832, where the operators already have three oil wells. The first three wells will be offsets to the producers and operations are scheduled to commence in the near future. Gulf Oil Corp. No. 1 Dixon, nearly 3 miles northwest of the Bennett field, will be plugged and abandoned at a total depth of 5,564 feet, after encountering sulfur water, which rose 4,000 feet in the hole.

Central and South Basin

The Deep Rock pool of central Andrews County, and just north of the Fuhrman pool received a mile and a half southeast outpost over the past week when J. W. Tripplehorn staked No. 1 Thornberry, Section 2, Block A-42, P.S.L. Survey.

Ector County

Ector County received an abandonment when Sinclair Prairie Oil Co. plugged No. 3-A Johnson, Section 37, Block 43, T.&P. Survey, a deep test between the Foster and the Harper pools. The test had indicated a possible deep pay when several favorable sections were penetrated, but none of these proved of commercial value and the test was bottomed at 4,610 feet. A new outpost for the Ector County Foster pool was staked by Humble Oil & Refining Co. as its No. 1 Henderson, in Section 30, Block 42, T.&P. Survey, one half mile west of the most southern producer in the pool. Cellar and pits are dug and drilling operations are scheduled to commence soon.

Schleicher County

Indications of a new gas pool for Schleicher County were seen over the past week when J. M. Cooper No. 2 Page, wildcat 10 miles southeast of Eldorado, uncovered an estimated four to five million feet of dry, sweet gas daily at 5,443-45 feet. Location is in Section 40, Block L, G.H.&S.H. Survey, and is three-quarters of a mile northwest of the same operator's No. 1 Page discovery distillate producer. The well is cleaning out and testing.

Sterling County

In Sterling County, J. W. Sward No. 1 Brennard, wildcat test in Section 107, Block 2, H.&T.C. Survey, which has been shut down for several weeks at contract depth of 3,000 feet in the Clear Fork branch of the Permian, is moving in heavier rig preparatory to drilling to 5,500 feet. This will be the deepest test ever drilled in the county and is expected to test the Canyon lime of Pennsylvanian age.

WEST CENTRAL TEXAS

Young County centered much attention in Central Texas as a new shallow producing area was discovered and the recently opened pool by Cosden Petroleum Corp. received a new test.

E. D. Wells and other No. 1 Graham P. Stewart, in the David Dawson Survey, northern Young County, apparently opened a new shallow horizon from 835-50 feet when the well bailed 6 bbls. of oil per hour. There are several shallow producing areas across the line in northwestern Jack County, but few have had wells larger than 50 bbls. per day. Official gauge has not been taken of the new well, but it is expected to make over 100 bbls. per day. Expansion of its newly-opened oil pool in the southeastern part of Young County will be sought by Cosden Petroleum Corp. at its first location staked in the area since bringing in the discovery well several weeks ago. Test will be No. 1 Sewell, Reynolds Survey, 900 feet due west of the discovery, which is making its 100-bbl. allowable in about three hours each day from a total depth of 3,954 feet.

Jones & Stasney's deep discovery well in Throckmorton County, No. 1 T. Brockman, Block 95, C.I.R. Survey, flowed 145 bbls. of oil in two hours on Railroad Commission gauge, after being acidized with 3,000 gallons. Pay is in the Marble Falls formation of the Bend formation of basal Pennsylvanian.

Jones County received a new wildcat location when L. L. Welborn and associates staked No. 1 May Cook in Section 89, B.B.B.&C. Survey. Contract depth is 4,000 feet.

WEST CENTRAL TEXAS COMPLETIONS

Coleman County's prospective pool opener, H. C. Wooten and others No. 1 W. R. Stockard, which has been estimated for 400 to 500 bbls. of oil per day from the Strawn sand, was last reported flowing about five bbls. per hour after being shot with 50 quarts. This wildcat is in Section 23, T.&N.O. Survey, one mile northwest of Novice.

Erath County received a new wildcat test when C. B. Collard staked a 5,500-foot test to the Ellenburger, about two and one-half miles west of Stephenville, in the W. L. Payton tract in the Henery Pierson Survey.

Bradish & Chastian staked No. 1 R. F. W. Weddington as a wildcat test in Section 464, S.P. Survey, in the southwest corner of Stephens County. It is about a half mile north of the Lone Star gasoline plant.

Completions in West Texas and Central and West Central Texas, with their sand records, and the initial daily production of the oil wells, were as follows:

CENTRAL AND WEST CENTRAL TEXAS

Brown County

Hart No. 1 Richmond, 1,293-1,305 feet, 4 bbls.

Callahan County

Hickok & Reynolds No. 2 Hickman, dry and abandoned at 568 feet; Jackson No. 1 Thompson, dry and abandoned at 1,645 feet.

Jones County

Brown Eagle Oil Co. No. 1 E. Haynes, dry and abandoned at 2,090 feet; Fain-McGaha Oil Corp. & Roberts No. 5 Daughtry, 1,915-39 feet, 272 bbls.; King Oil Co. No. 6 C. L. Carter, 1,933-44 feet, 402 bbls.; N. H. Martin & Son No. 1 J. M. Wyatt, 1,650-61 feet, 15 bbls.

Shackelford County

Iron Mountain Oil Co. No. 4 Ivy, 3,302-20 feet, 637 bbls.; Jones & Stasney No. 1-50 Davis, dry and abandoned at 1,545 feet; T. W. Lee & H. P. Key No. 1 Lee, 1,074-78 feet, 10 bbls.; Neff Meeks & Phillips No. 1 Clausell, dry and abandoned at 853 feet.

Throckmorton County

Burlingame & Mahon No. 1 C. C. Robinson, dry and abandoned at 480 feet; F. W. Lippett No. 2 White & Duncan, dry and abandoned at 984 feet; J. L. Shusher No. 1 Gray, dry and abandoned at 543 feet.

WEST TEXAS COMPLETIONS

Concho County

Sam Murray No. 1 Armor, abandoned at 495 feet.

Crane County

Ruston L. Ardrey Tr. No. 1 J. B. Tubbs, junked and abandoned at 2,760 feet; E. P. Cravens No. 2 Hughes, dry and abandoned at 2,575 feet; Magnolia Petroleum Co. No. 1-15 University, 3,200-3,327 feet, 133 bbls.

Ector County

Broderick & Calvert No. 2 J. E. Witcher, 4,180-4,326 feet, 1,112 bbls.; Gulf Oil Corp. No. 117 Goldsmith, 4,080-4,195 feet, 992 bbls.; Humble Oil & Refining Co. No. 9-C Scharbauer, 4,168-98 feet, 209 bbls.; Magnolia Petroleum Co. No. 3 Slator, 4,186-4,273 feet, 81 bbls.; Oil Well Drilling Co. No. 4-B Cowden, 4,070-4,224 feet, 1,405 bbls.; Phillips Petroleum-Pure Oil No. 30 Cowden, 4,120-96 feet, 970 bbls.; Phillips Petroleum-Pure Oil No. 35 Cowden, 4,103-57 feet, 1,420 bbls.; Sinclair Prairie No. 3-A Johnson, dry and abandoned at 4,610 feet; Stanolind Oil & Gas No. 4 Witcher, 4,038-4,186 feet, 896 bbls.; the Texas Co. No. 3-B J. E. Parker, 4,025-4,210 feet, 1,514 bbls.; Texas Pacific Coal & Oil Co. No. 30 Scharbauer, 4,180-4,250 feet, 1,921 bbls.; L. H. Wentz No. 1-B Texas Pacific Land Tr., 4,064-4,180 feet, 2,554 bbls.

Fisher County

Tide Water Associated Oil No. 2 Waddell, dry and abandoned at 3,590 feet.

Gaines County

Carter Oil No. 1-D Wasson, 4,888-4,993 feet, 1,111 bbls.

Howard County

Magnolia Petroleum Co. No. 8 O'Daniel, 2,650-2,814 feet, 456 bbls.

Pecos County

British American No. 3 Cordz, 1,925-2,030 feet, 252 bbls.; C. S. Messenger No. 3 fee, 1,290-1,311 feet, 41 bbls.; E. R. Minshall No. 1 Haynie, dry and abandoned at 3,278 feet; Wesley Oil & Gas No. 3 Francis & Lewis, junked and abandoned at 1,613 feet.

Runnels County

Beaudoin & Cannon No. 2 Giesecke, abandoned at 520 feet; Pride No. 1 J. C. Beddo, 3,498-3,603 feet, 10 bbls.

Scurry County

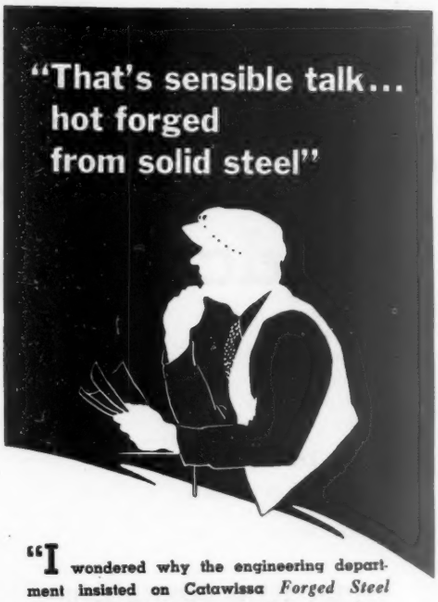
Robinson Drilling No. 1 Martin, temporarily abandoned at 3,515 feet.

Upton County

J. W. Ellis No. 11-B J. W. Robbins, 2,139-2,227 feet, 326 bbls.; W. D. Riser No. 1 King, abandoned at 730 feet.

Winkler County

Humble Oil & Refining Co. No. 9-D Walton, 2,796-



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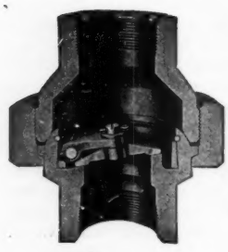

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CENTRALIA, ILLINOIS

2,990 feet, 605 bbls.; Magnolia Petroleum Co. No. 168 Walton, 3,205-60 feet, 887 bbls.; Magnolia Petroleum Co. No. 170 Walton, 2,840-2,930 feet, 1,800 bbls.; Magnolia Petroleum Co. No. 171 Walton, 2,840-2,925 feet, 2,608 bbls.; Magnolia Peroleum Co. No. 15 State-Walton, 3,185-3,254 feet, 891 bbls.

Ward County

Gulf Oil Corp. No. 110 Hutchins, 2,558-2,750 feet, 519 bbls.

Yoakum County

R. H. Gill No. 1 Dixon, dry and abandoned at 5,564 feet; Continental Oil No. 1 Dowell, 4,960-5,035 feet, 623 bbls.; Mid-Continent Oil Co. No. 6 Bennett, 5,055-5,277 feet, 2,177 bbls.; Shell Petroleum Corp. No. 3 Dowden, 4,161-5,071 feet, 165 bbls.; Shell Petroleum Corp. No. 3 Dora Roberts, 4,850-5,156 feet, 419 bbls.; the Texas Co. No. 2 A. B. Smart, 4,904-5,037 feet, 171 bbls.; Texas Pacific Coal & Oil Co. No. 9 Bennett, 5,055-5,240 feet, 2,276 bbls.

Illinois Fields

(Continued from page 82)

tankage. Carter Oil Co. No. 1 John Alsop, C NW SW NW Section 12-8n-3e, pumped 159 bbls. in 24 hours after a 40-quart shot in Weiler sand at 1,440-66 feet, plugged back from the total depth of 1,567 feet and with casing perforated opposite the Weiler pay. Barney Whisenant No. 1 H. Lilly, SE SE SW SE Section 16-8n-3e, was abandoned at 1,603 feet where the hole was junked.

In Jefferson County, Dix pool, Carter Oil Co. No. 1 Maude Foster, C SE NW NW Section 10-1s-2e, had Benoist sand at 1,949-65 feet and pumped 360 bbls. of oil and 5 bbls. of water in 24 hours.

In Wayne County, Fairfield pool, H. H. Weinert No 1 Marien, C SW SE NW Section 33-2s-7e, had McClosky pay at 3,307-23 feet and flowed 600 bbls. in 24 hours. It had not been acidized.

75 First Reports

First reports of new operations in the state, numbering 75, include the following:

In Marion County, Gray & Bialock No. 1 Doctor Welch, a wildcat, C E half NE NW Section 2-1n-1e, rigging up; J. L. Gardenshire No. 1 Westner, a wildcat, 890 feet from north and 880 feet from east line of NE quarter Section 12-1n-1e, spudded; Texas Co. No. 1 Richardson, 913 feet from south and 1,028 feet from east lines of NW quarter Section 5-1n-2e, location; Texas Co. No. 3 Corbin, 913 feet from south and 255 feet from west lines of NW quarter Section 5-1n-2e, location; Carpenter & Goldberg No. 1 Holsapple, C NE NE SE Section 25-2n-1e, drilling below 800 feet; Sheppard and others No. 1 C. Green, C SW NE SW Section 30-2n-2e, a wildcat, rigging up rotary; Texas Co. No. 5 M. Williams, 310 feet from south and 331 feet from east lines of SW quarter Section 32-2n-2e, location; Shabe Management & Engineering Co. No. 1 Ralph Morey, approximately in C NW NE SE Section 4-4n-1e, rigging up standard tools; Penn-Illinois Oil & Gas Co. No. 1 A. D. Nichols, a wildcat, NE SW SW Section 22-4n-2e, derrick up.

In Clay County, Pure Oil Co. No. 2 Joseph Ullom, C E half SE SW Section 16-2n-8e, location; Pure Oil Co. No. 5 J. Earl Moseley A, C E half SW SW Section 16-2n-8e, location; Pure Oil Co. No. 1 Daisy Bunn B, C W half NW SE Section 17-2n-8e, location; Andy Bruner No. 2 Kuyotte, NE NE NW Section 30-2n-8e, rigging up rotary; Pure Oil Co. No. 1 Charles D. Duff, C W half of 35-acre tract, which is the SW 35 acres of the SW quarter Section 33-3n-8e, set pipe at 215 feet, and drilling.

In Richland County, Mammoth Producing & Refining Co. No. 1 M. Yount, C S half SE NE Section 29-3n-9e, derrick up. Pyramid Petroleum Co. No. 3 George Sly, 80 feet south of C SW SE SE Section 22-4n-10e, rigging up rotary; J. V. Wicklund No. 2 Sager, 287 feet from south and 486 feet from west line of SW quarter Section 23-4n-10e, rig up; Sylvester and others No. 1 Osborn, SW NW SW Section 26-4n-10e, spudded; Texas Co. No. 1 B. F. Doty, SE NE SE Section 27-4n-10e, derrick up; Texas Co. No. 2 Winters, SE SE NE Section 27-4n-10e, derrick.

In Fayette County, J. Sharp and John Devers No. 1 Miles, SW NE SW Section 10-6n-3e, derrick; Trast, Vickers & Lewis No. 1 Dial, 880 feet from north and 330 feet from west lines of Section 6-7n-3e, set 12½-inch pipe at 35 feet and drilling; Kingwood Oil Co. and Duncan No. 4 Yolton, twin to No. 2, 377 feet from east and 300 feet from south lines of NW quarter Section 7-7n-3e, rotary tools in; Papoose Oil Co. No. 1 Owens, SE cor. SW SW NW Section 8-7n-3e, location; L. L. Blomgren No. 2 Owens, NW NW SW Section 9-7n-3e, derrick; Cummings, Sherman and Canary No. 2 Burtschi, NW NE SE Section 18-7n-3e, rotary tools in; Max Pray No. 2 Ferguson, 375 feet from north and 430 feet from west lines NW quarter Section 18-7n-3e, saturated Weiler sand at 1,518 feet, running 5½-inch casing; C. F. Benney and others No. 1 S. Buff, SW cor. SE NW NW Section 31-7n-3e, Avena townsite, derrick; Jones No. 1 Mills, NE SW SE Section 6-8n-3e, Bethel sand at 1,746 feet, drilling at 1,750 feet; Carter Oil Co. No. 4 J. G. Main, SE SE SE Section 15-8n-3e, location; Carter Oil Co. No. 3 J. S. Main, NE SE SE Section 15-8n-3e, rotary tools in; Carter Oil Co. No. 2 Walter Bartemus, NE SE NE Section 15-8n-3e, rotary rigged up; Whisenant and others No. 3 Lilly, SE SW SE Section 16-8n-3e, rotary rigged up; Magnolia Petroleum Co. No. 1 Della Rhodes, NW SE SW Section 27-8n-3e, spudded; Carter Oil Co. No. 1 R. T. Hopper, SE NE SW Section 27-8n-3e, rotary tools in; Jarvis Brothers No. 2 Sinclair, SW NW NE Section 29-8n-3e, Bethel sand at 1,457-86 feet and saturated Weiler sand at 1,385-1,423 feet, set 7-inch casing at 1,442 feet; Paul Doran No. 2 Goetting, 1,170 feet from north and 1,190 feet from east lines of NW quarter Section 32-8n-3e, location; Oil, Inc., No. 1 Blurton, NW NW NE Section 32-8n-3e, derrick; Paul Doran No. 1 Goetting, 860 feet from north and 1,450 feet from west lines of Section 32-8n-3e, spudded; Whisenant and others No. 1 Zanders, a wildcat, SW SE NW Section 36-9n-3e, an old well plugged back from 1,672 feet to 1,578 feet and temporarily abandoned, being cleaned out to plug back again; Carter Oil Co. No. 1 Bartscht, SW SE SE Section 20-9n-3e, derrick.

In Dewitt County, R. H. Smith and others No. 1 Dean Hill, NW cor. NW SW NW Section 20-21-1e, shut down.

In Clinton County, Adams Oil & Gas Co. No. 5 Felton, NW NW NW Section 1-1n-1w, set oil string in cement; Shell Petroleum Corp. No. 2 F. Hanseman, NE NW SE Section 1-1n-1w, drilling below 1,350 feet; Shell Petroleum Corp. No. 6 Criley, NW NE NE Section 2-1n-1w, drilling below 1,300 feet; Adams Oil & Gas Co. No. 4 Baker, 970 feet from south and 900 feet from east lines of Section 12-1n-1w, drilling at 1,270 feet; Huddleton & Gwin No. 1 Rogers, lot 16, Block 8, H. T. Addition, Section 12-1n-1w, drilling below 1,200 feet; Shell Petroleum Co. No. 2-B Allison, 515 feet from north and 1,174 feet from east lines of NE quarter Section 12-1n-1w, cellar and pits; O. S. Strickland No. 1 H. O. Williams, Lot 14, Block 4, second Home Terrace Addition, Section 12-1n-1w, machine rigged up; Hawley Oil & Gas Co. No. 1 Chester Carter, center of Lots 1 and 2, Block 1, Finney Heights, Section 24-1n-1w, standard tools rigged up; Iroquois Oil & Gas Co. No. 1 Rogers, Lot 15, Block 4, Pullen Heights, drilling at below 1,000 feet; Liner Oil Co. of Louisiana No. 1 Timmins, Lot 21, Block 1, Pullen Heights, Section 24-1n-1w, drilling below 600 feet; W. J. McCullogh No. 1 Langford, Lot 15, Block 4, Finney Heights, machine rigged up; Pace & German No. 1 Blanks, Lot 24, Block 5, Finney Heights, set 8¼-inch casing at 601 feet; Rockwood and others No. 1 B. Warren, Lot 22, Block 6, Finey Heights, Section 24-1n-1w, rotary tools in; John Watkins No. 1 Koelling, Lot 2, Block 6, Finney Heights, drilling at below 700 feet; Santa Fe Oil & Gas Co. No. 5 Vandeloo, NW cor. NE Section 8-1n-3w, rotary rigged up.

B. N. Trahan and others No. 1 Nicolay, SW NW NE Section 14-2n-1w, drilling below 1,100 feet; W. C. McBride, Inc., No. 5 Carson, 990 feet from north and 368 feet from east lines of SE quarter Section 35-2n-1w, location; Shell Petroleum Corp. No. 7 Criley, SW SE SE Section 35-2n-1w, location;

In St. Claire County, W. E. Neil No. 1 Pfeffer, SE SE NE Section 20-2n-6w, shut down at 655 feet.

In Wabash County, Mahugh and others No. 14 Kogan, SE cor. NE Section 2-1n-12w, drilling below 625 feet.

In Lawrence County, Harris and others No. 1 Downey, C E half SE NW Section 32-23n-11w, is a location for a wildcat; W. Hastings and others No. 14 Kirkwood, 1,020 feet from east and 1,245 feet from south lines of NW quarter Section 11-3n-12w, drilling below 860 feet.

In McDonough County, W. T. Cole and others No. 1 M. Williams, NW cor. NE SW Section 16-4n-4w, Fourth Principal Meridian, drilling below 175 feet; Charles Measley and others No. 1 George Falter, NW cor. NE NE SE section 17-4n-4w, sand at 425-36 feet, shot with 20 quarts, cleaning out; Emery & Harter No. 2 Tabler, C SW SE SW Section 18-4n-4w, shut down at 415 feet.

In Clark County, Rex Clump No. 1 Brookhart, SE cor. SW NW NW Section 30-11n-14w, drilling below 425 feet; Stipes No. 1 Bennett, SW cor. NW SW Section 19-12-13w, machine rigged up.

In Edgar County, Bearcey No. 1 Blair, NW cor. Section 24-14n-14w, drilling below 200 feet.

In Coles County, Mabee and others No. 1 Oakland Bank, 380 feet from north and 200 feet from west lines of NE quarter Section 31-14-14w, drilling below 960 feet.

In Jefferson County, Carter Oil Co. No. 3 Maud Foster, NE cor. Section 9-1s-2e, drilling below 530 feet; Benedum-Trees, Inc., No. 1 Jefferson Oil & Gas Co., C NW NE Section 16-4s-2e, rig up.

In Franklin County, Adams Oil & Gas Co. No. 1 Old Ben Coal Co., 380 feet from west and 190 feet from south lines of NE quarter Section 19-5s-2e, rigging up rotary.

In Washington County, Scott Townsend and others No. 1 Sam Kaser, SE SE NW Section 6-3s-2w, rotary tools in.

CENTRAL OHIO

LIMA, Ohio, Aug. 22.—Ohio fields yielded 14 completions for the week, seven gas wells, four oil wells and three dry holes.

In Athens County, Trimble Township, Ohio Fuel Gas Co. No. 164 Sunday Creek Coal Co., Section 35, is good for 325,000 feet of gas from Berea sand at 1,188 feet.

In Belmont County, Somerset Township, Peters & Huntsman No. 1 William R. Davis, Section 1, is a 4-bbl. pumper in the Keener at 1,327-37 feet.

In Guernsey County, Millwood Township, M. J. Purdy No. 1 Arthur Colburn, Section 15, made 200,000 feet of gas in 24 hours from the Berea at 1,512 feet.

In Harrison County, Freeport Township, Jewell Oil & Gas Co. No. 1 Elizah Carver Heirs, Section 13, was dry and abandoned at 1,389 feet.

In Knox County, Howard Township, H. E. Perkins No. 1 L. G. Simpson, Lot 4, fourth quarter, is a gas well gauging 900,000 feet from Clinton sand at 2,590-2,610 feet. In Jackson Township, Ohio Fuel Gas Co. No. 1 D. J. Ashcraft, Section 6, made a small showing of gas from the Clinton sand at 2,800-12 feet and was abandoned after testing.

In Licking County, Fallsbury Township, Rutlege & Mosholder No. 5 Thomas Moran, Section 13, made 150 bbls. of oil first 24 hours after a shot from the Clinton sand at 3,001-59 feet. In Fallsbury Township, H. B. Walker No. 1 Mrs. J. W. Martin, Section 13, made 39 bbls. of oil the first 24 hours after a shot in Clinton sand at 3,012-45 feet. In Mary Ann Township, Rutlege & Mosholder No. 1 James Fullerton, Lot 19, first quarter, is a small gas well in the Berea at 830 feet.

In Noble County, Seneca Township, Chaseville Oil Co. No. 1 John Rich, Section 31, is a small gas well in the Berea at 1,457-60 feet.

In Washington County, Decatur Township, Williams Brothers No. 4 T. B. Miller, Section 36, gauged 500,000 feet of gas from the Keener sand at 1,250-53 feet. In Liberty Township, Depuy Brothers No. 3 Irvin Hendershot, Section 21, is a gas well making 250,000 feet per day from the third Salt sand at 1,152-60 feet and the Maxon sand at 1,288-1,305 feet. In Warren Township, Coffman Oil Co. No. 9 John Coffman, Lot 324, is an oil well making about 4 bbls. daily, settled production, from the first Cow Run sand at 809-834 feet.

Lima Field

In the area northeast of Tiffin, in Seneca County, Clinton Township, Section 33, Jones & Keener abandoned their attempt to drill No. 16 S. B. Sours deeper from the Trenton pay to the Green sand. The operators were unable to recover lost tools. In Seneca Township, George Spohn and others No. 1 G. W. Davidson, Section 11, found the Trenton rock dry at 1,538-1,630 feet.

EASTERN KENTUCKY

ASHLAND, Ky., Aug. 22.—Although operations continue at a subnormal rate in eastern Kentucky, several completions are included in this week's report of field activities.

Burnett & Prewitt No. 6 Day Timber & Coal Co. tract, on Tug Fork of Walkers Creek in the Hell Creek district of Lee County, reached a total depth of 1,260 feet and is making 10 bbls. of oil per day.

Kentucky-West Virginia Gas Co. completed No. 20 C. W. Preece land on Peg Fork in Martin County at a total depth of 1,344 feet with an initial production of 18 bbls. of oil. No. 201 M. S. Layne Heirs, Inland Gas Corp. operation, reached a total depth of 1,550 feet and produced 38 bbls. of oil in 24 hours.

United Carbon Co. completed No. 743 on Rebecca James and others land, Tract 1, on John Creek in Pike County. The well reached a total depth of 2,703 feet, in shale, and has a daily gas flow of 179,000 feet.

Hamilton Gas Co. No. 77-D, on James Hatcher land, on Dropping Lick in Floyd County, was completed at a total depth of 3,248 feet, in shale. The well is producing 213,000 feet of gas per day. Fred Williams completed No. 1 Stanley Heirs, on Mare Creek in Floyd County, at 2,560 feet, in shell, with a flow of 300,000 feet of gas daily.

Virginian Gas & Oil Co. completed a dry hole at 1,578 feet, Maxon sand, in No. V-1266 on Coldwater Fork in Martin County.

The Virginia Gas & Oil Co. drilled a dry hole in No. 4, V-1268 W. J. Parks land on Big Crooked, in Martin County, at a total depth of 1,349 feet, in Maxon sand.

Operator Diedrich No. 6 Amy Pauley (Stepp) on Big Crooked in Martin County was completed at a total depth of 1,449½ feet, in Maxon sand, and started as a 10-bbl. well.

In Magoffin County, Brand Brothers have rig up for No. 2 Lon Tacket on Twin Lick, in the Wheelersburg district. The same operators plugged No. 1 on same land. This well was recently reported as a small producer.

In Martin County, Virginian Gas & Oil Co. is still fishing for casing in No. 3 W. J. Parks. Kentucky-West Virginia Gas Co. is moving to No. 5243 C. W. Preece on Coldwater Fork and was drilling at 2,910 feet in No. 5245 on same land. Warfield Gas Co. made a location for No. 4782 John D. Cornett land on Muddy Branch.

In Knott County, Inland Gas Corp. is down 1,156 feet in first Salt sand in No. 202 Elizabeth Adams land, on Right Fork of Troublesome Creek. United Carbon Co. made a location for No. 1 George W. Cornett, on Big Branch.

In Floyd County, Warfield Gas Co. made a location for No. 4810 Mary B. Runyon and others land on Toler

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Creek. Jones & Lindsey are drilling below 2,300 feet in No. 2 Bell Wells, on Levisa Fork. Kentucky-West Virginia Gas Co. is idle at No. 574 John and Benjamin Sellars on Levisa Fork. Kentucky-West Virginia Gas Co. was drilling at 622 feet, in slate, in No. 575 Henry C. Slone land on Levisa Fork.

In Johnson County, Kentucky-West Virginia Gas Co. is rigging up at No. 576 Julia Ward land, on Wiley Branch of Levisa Fork .

In Pike County Mountain Oil & Gas Co. was shut down in Big lime at 2,000-foot level in No. 1 O. T. Alley at Blackberry. The Bent Mountain Oil & Gas Co. has started drilling No. 1 Varney & Deskins heirs on Blevins Branch.

In Wolfe County, James L. Hollon was drilling below 3,435 feet in No. 1 D. H. Rose on Red River. No. 1 Spencer, on Meadow Branch, is reported below 200 feet.

WESTERN KENTUCKY

OWENSBORO, Ky., Aug. 22.—Birk City pool in Henderson and Daviess counties experienced a lull in results in the past week. One well good for 75 bbls. a day was brought in but had not yet been acidized. Several wells are on top of or in the pay but had not yet been tested for production. Three new starts were made on the Daviess County side and three on the Henderson County side of the field.

Completions and new operations in the Western Kentucky district were as follows:

In Webster County, Sebree district, I. B. Browning and others' test, No. 6 Ramsey, total depth 3,217 feet, has been abandoned a hole full of water.

In Butler County, Mount Zion school district, Porter Evans and others Nos. 6 and 7 E. G. Harper, dry holes, total depth 176 feet. Barnsdall Oil Co. No. 1 E. G. Harper, 13 bbls. per day, total depth 178 feet.

In Daviess County, Birk City district, I. B. and Frank Hamilton No. 2 Birk City School Lot, spudding; R. M. Compton and others No. 1 L. W. Brown, drilling at 500 feet; Bailey, Bond, Hayes & Fitzpatrick No. 1 R. M. Hagan 100 acres, gun perforated pipe and acidized, good well, no estimate of production; Major Oil Co. and others No. 1 Mrs. H. Harrington, tested 72 bbls. in 24 hours; Major Oil Co. No. 1 Theresa Peters, a lot, moving in; Major Oil Co. No. 1 Sanders Community Lease, drilled into McClosky pay, will acidize; Major Oil Co. No. 1 Dr. T. B. Sanders, cored into McClosky lime, good showing of oil; W. E. Hupp and others No. 3 Mrs. L. Taylor, cored into McClosky lime. Cane Run school district, Ellis & Ashby No. 7 Dr. Fireline, rigging up.

Henderson County

In Henderson County, Birk City district, Hoosier Drilling Co. No. 7 C. T. Blackwell, set and cemented casing on top of McClosky lime; Imperial Oil & Gas Products Co. and Thompson Drilling Co. No. 1 Bertie Gibson, spudding in; Carter Oil Co. No. 2 Tom Jones 20 acres, rigging up; Sun Oil Co. and Kentucky Natural Gas Co. No. 1 Waverly Staples, derrick up and moving in.

In Ohio County, Taffy district, Rex Pyramid Oil Co. No. 18 Scott Ambrose, pressure well, Jett sand, total depth 601 feet. Ralph district, Dr. G. M. Hardie No. 5 Mrs. Nannie Bean, 15 bbls. per day from Jett sand at 610-19 feet; Fred J. Young and others No. 4 M. Coleman, dry hole, total depth 630 feet. Friendship Church district, Charles Marsh and others No. 5 John Bellamy, drilling at 100 feet. Adaburg district, Leeper Oil Co. No. 10 L. C. McKinley, 5 bbls. per day from Jett sand at 707-20 feet; Nollem Oil & Gas Co. No. 8 Vincent Crowe, 10 bbls. per day from Jett sand at 625-44 feet. Fordsville district, Mohawk Drilling Co. No. 1 Lanham Heirs, 5 bbls. per day from Jett sand; A. J. Stewart and others No. 20 Ed S. Dunn, dry hole, through Jett sand. South Livermore district, Cumberland Petroleum Co. No. 1 Farmers & Merchants Bank 100 acres, drilling at 1,300 feet, Jett sand, dry hole. Oklahoma district, Coffee and others No. 1 D. S. French, 20 bbls. per day from Jett sand.

Eastern Fields

(Continued from Page 87)

In Poca district, United Fuel Gas Co. made a location on the Joseph W. Legg farm, elevation 948.2 feet. The Paymaster Oil & Gas Co. has a location for a test on the P. S. Berry farm.

Four wells are cementing casing in the Corniferous. In Poca district, the South Penn Oil Co. cased in the lime at 5,004 feet; United Fuel Gas Co. topped the lime at 4,800 feet in the W. J. Glass No. 4,787; cased at 4,902 feet in No. 4788 I. W. Cavender; cased at 4,966 feet in No. 4791 W. J. Glass. The Geary Morley Gas Co. ran 8-inch casing at 4,890 feet in the test on the Diana J. Milam Heirs farm.

The deep test of the Columbian Carbon Co. on the Giles Hammat Heirs farm in Grant district, Pleasants County, is still fishing at 4,100 feet. In the hole is one joint of 8¼-inch casing with shoe and one string of tools stuck in the casing. This was drilled by and taken hold with a second string but the hole caved and stuck the second string which is now being drilled by. The depth of the fishing is at 1,700-1,800 feet.

In Jackson County, the test of Joe Rubin on the W. J. Brown farm north of Ravenswood on the Ohio River in Ravenswood district is still standing with no additional test and to date not shot.

New Work

In Clay County, the Pittsburgh & West Virginia Gas Co. have locations for tests on the J. D. Engle land, elevation 1,042 feet, and on the W. Hunter Smith and others land, elevation 1,015 feet, both in Otter district.

In Jackson County, Everett Starcher and others have a location for a test on the Story Boggess farm in Ripley district, elevation 733.77 feet.

In Lincoln County, the Cambridge Gas Co. will deepen the A. M. Mullins test in Jefferson district. In Putnam County, the Huntington-Oklahoma Gas Co. made a location for No. 3 B. W. Coyner in the Scott district, elevation 623 feet.

In Ritchie County, R. C. Jackson will drill on the Charles Bickerstaff farm in Grant district, elevation 1,056 feet. In Murphy district, J. F. Deem made a location for No. 4 McGregor Heirs.

In Wayne County, Kentucky-West Virginia Gas Co. made a location for No. 1 Wayne B. Ferguson and others in Lincoln district. In Wetzel County, George P. Wasmuth will drill on the F. B. Ritz land, Proctor district, elevation 629 feet. In same district, George Myers made location on Lots No. 27 and 28 M. P. Wells, elevation 630.5 feet. In Wood County, P. E. Deem has a location for a test on the D. C. Little farm in Union district, elevation 820.5 feet.

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Texas and Louisiana Gulf

By NEIL WILLIAMS

Bancroft, La., Pool Proves to Be a Crude Oil Producer

HOUSTON, Tex., Aug. 22.—Converting the Bancroft distillate field in Beauregard Parish into what appears to be a promising oil field, and the opening of a distillate field southeast of the Lirette pool in Terrebonne Parish, continued to keep the Coastal Louisiana sector in the limelight of Gulf Coast operations.

Republic Production Co. No. 1 Columbia Land & Timber Co., Section 16-6s-13w, 1 mile southwest of the Bancroft discovery well, is flowing an estimated 450 bbls. of 37-gravity oil per day through a quarter-inch choke, with tubing pressure 1,550 pounds and casing pressure 1,510 pounds. The hole is bottomed at 7,388 feet, and the well is producing through perforated casing at 7,320-30 feet. A total of 56 feet of sand showing oil and gas was reported to have been cored, and 7-inch casing was cemented at 7,368 feet, after a 10-minute drill stem test recovered pipe line oil.

The field is in the extreme southwestern part of the parish, on what is known as the Conroe trend. The discovery well, which was drilled by the same company, was completed in May as a distillate producer through perforated casing at 7,572-79 feet. This is the second field to produce from the Cockfield formation, along the Louisiana sector of the Conroe trend, although deeper production possibilities from the Wilcox horizon (Lower Tertiary) was recently established by the opening of the Villa Platte field in Evangeline Parish, approximately 65 miles to the northeast.

Southeast of the Lirette field, Terrebonne Parish, Fohs Oil Co. established distillate production from another 11,000-foot horizon with the completion of No. 1 Bay Baptiste, Section 41-9s-19e. This well, which was drilled to 13,409 feet, is flowing 53 bbls. of distillate per day through a 10/64-inch choke under a tubing pressure of 4,000 pounds. Final completion was made through perforated casing at 11,172-78 feet. This is the second deep discovery made by the company within the past few weeks. Its well in the Dulace field, about 18 miles to the east, was recently completed as the world's deepest producer at 13,254-66 feet.

The producing area on the recently opened northwest flank of the Jennings field was enlarged as Noble & Baker No. 1 Ed Prather, an outpost, topped oil sand at 7,433 feet and was taking additional cores before running casing for completion. On the southwest flank, Glassell and others No. 5 Trushel, Section 42, cored oil sand to a total depth of 7,200 feet and casing was being cemented for completion.

The second producer in the recently opened southwest flank of the West Hackberry field was indicated as Superior Oil Co. was running casing in No. 3 Vincent, bottomed at 6,632 feet, with approximately 22 feet of sand cored at 6,583-6,605 feet. The well is in Section 30-12s-10w.

Distillate production from a new sand in the Bayou Des Allemands field, St. Charles Parish, was opened by the completion of Amerada Petroleum Corp. No. 4 State, Section 13-15s-20e. This well was drilled into salt at a total depth of 9,914 feet, and was plugged back to 9,465 feet. Casing was perforated at 9,453-63 feet and the well is flowing 186 bbls. of distillate daily through a quarter-inch choke.

Another deep producer was added to the Lafitte field, Jefferson Parish, by completion of Texas Co. No. 11 Laffite, Section 19-17s-24e. Drilled to a total depth of 10,106 feet, the well was completed through casing at 9,998-10,022 feet, for an initial production of 1,733 bbls. of oil per day, flowing through a three-eighths inch choke.

Texas Gulf Coast

In the Texas Gulf Coast area, interest was centered on Magnolia Petroleum Co. No. 3-A West Ranch, Jackson County, where a production test was to be made, following a drill stem test, which showed pipe line oil. Sand with an oil odor was cored at 5,080-82 feet, and oil sand at 5,084-86 feet. On a 4½-minute drill stem test at 5,078-86 feet, 420 feet of oil was recovered, and the well built up a working pressure of 27 pounds. This is the third test drilled on the company's block of several thousand acres, which centers in the R. Musquiz Survey. It is about 4,100 feet north and slightly west of No. 2-A West, recently abandoned after showing for a gas well at the approximate same depth. The Frio sand was topped at 5,080 feet.

In the Cheek field, Jefferson County, Shell Petroleum Corp. was expected to make a squeeze job in No. 1 Pleasant, after the well came in flowing 36 bbls. of 52-gravity distillate per day through a three-sixteenths inch choke. The well is located south of the discovery well and was treated through perforated casing at 7,717-20 feet.

In the same county and located in the North Cheek field, Magnolia Petroleum Co. No. 5 J. H. Phelan was flowing an unestimated amount of distillate, while cleaning into the pits through a 17/64-inch choke, showing a tubing pressure of 1,700 pounds and casing pressure 1,600 pounds. Sand was reported at 8,314-23 feet, which is a new sand for the structure, being about 250 feet higher than the two other producers, which are flowing pipe line oil.

Jack Frazier No. 4 Vollmer-Neiman, an outpost about 1,000 feet west of production in the Eureka field, Harris County, is flowing gas and salt water after perforating casing at 7,720-35 feet. The well topped the sand high at 7,675 feet, and is apparently too far up on the gas cap to produce oil. Tide Water Associated Oil Co. No. 1-B Laura Lackner, topped gas sand at 7,634-36 feet, and oil sand at 7,674-87 feet. The hole was drilled to a total depth of 7,725 feet and casing is being cemented for completion. Same company's No. 2 Lackner is fishing for tubing, after the well tested salt water at 7,684-7,704 feet. This is the most easterly well drilled in the field and if productive will extend production within a half a mile of the Houston city limits.

Fairbanks Partly Defined

The Fairbanks field, Harris County, was defined in two directions. W. V. Bowles No. 3 Galloway, 4,000 feet north of production in the Mary McFarland Survey, was abandoned at 7,232 feet after no showings were found in the discovery horizon or in the deep sand recently opened by Union Producing Co. on the Goodykoontz lease, several thousand feet to the northeast. No. 3 Galloway topped the Discorbis Yegua at 6,590-6,620 feet and the Eponides at 6,650-80 feet. Approximately the same distance east of production in the Samuel Lewis Survey, Stanolind Oil & Gas Co. No. 1 Fritz Look is coring below 7,269 feet and is apparently a dry hole as only a slight showing was cored in the 6,800-foot pay, and so far no showings have been reported from the deep sand. Interest in the field is now centered on Housh & Thompson No. 1 Fisher Estate, about midway between the Satsuma field and southwest of the most southerly production at Fairbanks. Late in the week the well was drilling below 4,000 feet and it should reach the discovery horizon by the end of the week. The producing limits of the field are being gradually defined and drilling operations are expected to show a decrease within the next three weeks.

The Bammel field, Harris County, recently converted into an oil field, received a new operation as H M. Harrell and George Lawrence began moving in material for No. 1 Ehrhardt, in the H. Simmons Survey, about 3,000 feet northeast of No. 1 Polley.

Humble Oil & Refining Co. abandoned a second test on the McFaddin Beach salt dome, offshore from Jefferson County in the Gulf of Mexico. No. 6-B McFaddin State, Gulf of Mexico, topped anhydrite at 1,726 feet and was abandoned in the formation at 2,134 feet. Piling is being driven for No. 8-B McFaddin.

There were three wildcat locations reported during the week. In the extreme northeast corner of Liberty County in the J. F. De Rumayor Survey, John G. Mayo has rig up for No. 1 M. E. Roberts, a projected Cockfield test. Across the line and in the southwest corner of Montgomery County, David B. MacDaniel is preparing to spud No. 1 J. C. Fleming, situated in the D. M. Gaheen Survey. In the Greenville area, Washington County, Speed Oil Co. and others were drilling for water preparatory to spudding No. 1 August Makowsky, about 2 miles southwest of Burton in the D. McIntyre Survey. The well is scheduled to be drilled to a depth of 5,500 feet, or 200 feet into the Wilcox formation.

COMPLETIONS ON TEXAS COAST

Brazoria County

Hastings field: Humble Oil & Refining Co. No. 2-F Beers, 6,050 feet, 602 bbls., quarter-inch choke; No. 8 J. Alexander, 6,050 feet, 615 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 20-A H. H. Ford, 6,135 feet, abandoned; No. 29 Steve Paul, 5,835 feet, 574 bbls., quarter-inch choke. Manvel field: Texas Co. No. 1 M. W. Jones, 7,641 feet, abandoned.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 23 G. C. Johnson, perforated casing 7,112-17 feet, 670 bbls., quarter-inch choke. Cedar Point field: Standard Oil Co. of Texas No. 1-94 State, sand 4,413-30 feet, 263 bbls., quarter-inch choke. Turtle Bay field: Stanolind Oil & Gas Co. No. 6 A. D. Middleton, 6,607 feet, abandoned.

Galveston County

Dickinson field: Atlantic Refining Co. No. 1 Fredericks, perforated casing 8,071-76 feet, 724 bbls., quarter-inch choke.

Hardin County

Batson field: John Deering No. 1 Jordan, perforated casing 5,340-60 feet, 181 bbls., 10 per cent salt water.

Harris County

Fairbanks field: Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 2 W. E. Denman, perforated casing 6,838-46½ feet, 316 bbls., quarter-inch choke. Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 2 Day, perforated casing 6,845-52 feet, 325 bbls., quarter-inch choke; No. 3 E. W. Mills, perforated casing 6,842-53 feet, 196 bbls., quarter-inch choke. W. V. Bowles No. 3 Galloway, 7,232 feet, abandoned. Windsor Oil Co. No. 4 H. E. Ley, perforated casing 6,837-42 feet, 658 bbls., quarter-inch choke; No. 5 H. E. Ley, perforated casing 6,830-34 feet, 715 bbls., quarter-inch choke. Friendswood field: Humble Oil & Refining Co. No. 17 Beamer, sand 5,718-6,045 feet, 617 bbls., quarter-inch choke; No. 18 L. S. Beamer, sand 5,698-6,043 feet, 595 bbls., quarter-inch choke; No. 10 E. A. Grey, sand 5,925-6,046 feet, 622 bbls., quarter-inch choke; No. 13 E. A. Grey, sand 5,930-6,056 feet, 648 bbls., quarter-inch choke. Humble field: John Deering No. 3 Lee, perforated casing 4,255-60 feet, 200 bbls., open tubing; No. 5 Stephenson, perforated casing 2,478-88 feet, 75 bbls., quarter-inch choke. Pierce Junction field: Hamill & Smith No. 4 Bashara, 4,320 feet, 35 bbls., pumping. Tomball field: Humble Oil

& Refining Co. No. 7 M. H. Gossett, perforated casing 5,549-54 feet, 24 bbls., quarter-inch choke.

Jackson County

Cordelle field: Crown Central Petroleum Co. and others No. 3 J. W. Frost, 2,660 feet, 112 bbls., 9/64-inch choke.

Liberty County

Hankamer field: Hankamer Oil Co. No. 2 Stingler. 3,063 feet, abandoned. Hardin field: Atlantic Refining Co. No. 2 Wilson, perforated casing 7,591-95 feet, 119 bbls., quarter-inch choke. Gulf Oil Corp. No. 4 J. C. Barfield, 7,686 feet, abandoned. South Liberty field: Lawrence Oil Co. No. 3 Van DeVenter, 4,750 feet, abandoned.

Orange County

Orange field: General Petroleum Corp., 6,035 feet, perforated casing 5,990-6,018 feet, 36 bbls., three-sixteenths inch choke.

Oklahoma Fields

(Continued from Page 95)

was completed as a 12-bbl. oil pumper in Layton sand at 1,284 feet, total depth.

J. B. Grieves No. 1-A Armstrong, NE SW NE SW Section 34-20-7, had Arbuckle lime at 3,385 feet, total depth 3,582 feet, plugged back to 2,325 feet and was completed as a salt water disposal well.

New work in Pawnee County: Selby Oil & Gas Co. No. 2 Peterman, NW SW NW Section 24-20-9, drilling below 1,175 feet; Sinclair Prairie Oil Co. No. 6 Berger B, NE NE SE Section 17-21-8, an old well being deepened, drilling at 2,036 feet; Peter Adamson, Jr., No. 12 Thomas, SE NW NW Section 25-21-8, drilling below 830 feet.

Carter County

Magnolia Petroleum Co. No. 5 Thompson, NE NE NW Section 9-4s-3w, Healdton field, Carter County, had initial yield of 21 bbls. of oil from Deese-Healdton zone at 1,052 feet, total depth.

Shell Petroleum Corp. No. 22 Horton, NE NW SE Section 6-4s-3w, was bottomed at 1,261 feet, plugged back to 1,250 feet, and produced 11 bbls. of oil and 42 bbls. of water, initially.

Scattered New Operations

In Kay County, E. J. Shaffer and others No. 1 Onstott, SE SW NE Section 17-28-1w, rig.

In Noble County, Midco Oil Corp. No. 2-A Yost, SW NW NE section 22-23-2w, rig.

In Muskogee County, Metzger & Foltz No. 1-A Henry, SE NW NE section 11-14-18, machine.

In Marshall County, M. C. McGlothlin No. 5 Haggard, NW SE SE NE Section 25-7s-5e, Enos pool, was rigging up machine; same operator's well in SW SE SE NE Section 25-7s-5, was drilling below 260 feet.

In Caddo County, Ohio Oil Co. No. 4 Lackey, Account No. 2, NE SW NW Section 11-5n-9w, Cement field, plugged back from 4,273 feet to 3,742 feet, shot and was to test; same company's No. 1 Lackey, Account No. 3, NW SE NW Section 11-5-9w, old total depth 4,080 feet, perforated casing and was to test; Magnolia Petroleum Co. No. 9 Lackey, NW cor. Section 11-5-9w, was a derrick.

In Stephens County, Louis Sikes No. 8 Mulkey, NW NE SW NE Section 16-1s-8w, Duncan pool, was rigging up rotary.

In Comanche County, Wichita Oil, Inc., No. 8 Noble, NW SE SE NW Section 28-2n-10w, Lawton pool, was a location.

Okmulgee County

Sooner Oil & Gas Co. No. 1-A McCrary, NE NW NE Section 20-16-11, Okmulgee County, was dry and abandoned in sand at 2,172-89 feet, total depth.

Hardesty and others No. 3 Davis, NE NE NW Section 26-19-12, had spudded; T. J. Lynch and others No. 13 Thomas, NW SE NW Section 30-14-14, was drilling below 450 feet; Commercial Drilling Co. No. 2 Parks, NW NE NE Section 35-15-12, was rigging up machine.

Seminole County

Magnolia Petroleum Co. No. 2 Carbitcher, SE NE SW Section 14-9-5, Earlsboro pool, Seminole County, an old well, was deepened from 4,142 feet to 4,185 feet, and was dry and abandoned. Gulf Oil Corp. No. 2 Butler, SW NE NE Section 35-9-6, an old well, plugged back from 4,065 feet to 2,200 feet, deepened to 2,391 feet, and was abandoned.

Rogers Oil & Gas Co. No. 1 Oakes, SW cor. Section 16-7-6, was building rig; J. F. Smith No. 1 Smith, NW NE NE Section 20-7-6, was a location.

Michigan Fields

(Continued from Page 100)

C. W. Teater No. 1 Bellinger, SW SE SE Section 32-14n-5w, Marshall 1,405 feet, show water 1,420 feet, hole full water 1,460 feet, drilling 1,705 feet.

Sun Oil Co. No. 1 State-Jerome B, SW SW NE Section 9-15n-1w, show oil and gas 5,020-25 feet, total depth 5,065 feet, plugged back 5,035 feet.

Daily Crude Oil Co. No. 1 Thrush, SW NW SE Section 25-16n-7w, Marshall 1,463 feet, Redrock 1,640-1,755 feet, drilling 2,550 feet.

M. Bliss Keeler and Chatham Oil Co. No. 1 Stevens Estate, SW SW NW, Section 13-16n-6w, rigging up.

Turner Petroleum Corp. No. 1 White, SE NE NW Section 28-16n-3w, Dundee 3,654½ feet, show gas 3,700 feet, pay 3,704-16 feet, water 3,719-23½ feet, total depth 3,723½ feet, plugged back 3,716 feet, acidized, initial production 100 bbls. in 19 hours, 1,500 feet of oil in hole in one hour.

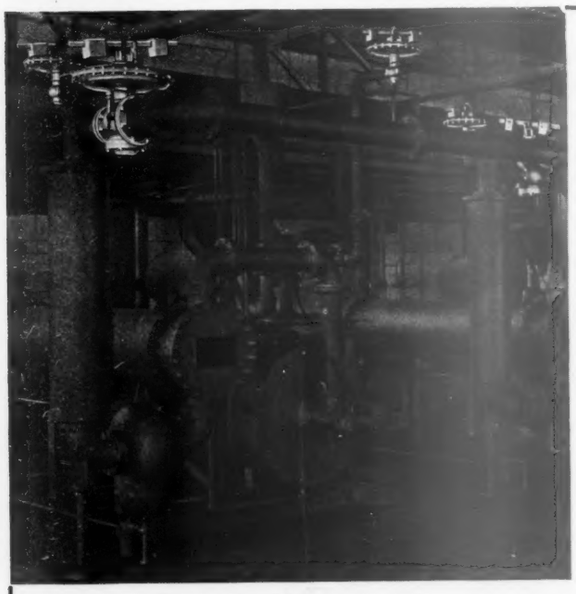
C. W. Teater No. 1 Tushingham, SW NE SW Section 26-16n-2w, Antrim 2,574 feet, Traverse 3,054 feet, drilling 3,165 feet.

Sun Oil Co. No. 1 State-Edenville E, NE NE NE Section 20-16n-1w, drilling 482 feet.

Sun Oil Co. No. 1 State-Edenville F, NW SW SW Section 33-16n-1w, Marshall 1,253 feet, water 1,281 feet, drilling 1,281 feet.

Dale Leonard Prospecting Co. No. 1 Huron Milling Co., NW NE SE Section 10-16n-15e, Dundee 1,896 feet, water 2,067-75 feet, water 2,085-92 feet, show gas 2,102 feet, show oil 2,200 feet, show water 2,426 feet, plugged back 2,421 feet, shot with 20 quarts August 7, no results.

S. J. Higelmire, Trustee No. 1 Van Horn, NE SW



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NW Section 3-18n-6w, Monroe 3,891 feet, pay 3,891-94½ feet, total depth, treated with 200 gallons August 9, A.P.I. 85 bbls. first hour.

Fortney Oil Co. No. 1 Beall, SE SE SE Section 25-18n-9w, rig.

J. V. Wicklund Development Co. No. 3 State M, NE NW SE Section 5-18n-6w, drilling 1,355 feet, hole full water 1,055 feet.

McClanahan Oil Co. No. 1 Perkins, NE NE NE Section 15-18n-6w, drilling 1,152 feet, hole full water 1,105 feet.

Gulf Refining Co. No. 1 Ann Arbor Railroad, C W half NW NW Section 21-18n-5w, stray 1,549-95 feet, 21,000,000 feet gas 1,549-55 feet, Dundee 4,014 feet, show gas 4,021-23 feet, show oil 4,023 feet, show oil and water 4,025-26 feet, total depth 4,285 feet, dry and abandoned.

Bell Marks, Inc. No. 1 State, SE SE SE Section 20-18n-1w, drilling 2,428 feet, Sunbury 2,295 feet, Berea 2,337-78 feet, Antrim 2,404 feet.

Pure Oil Co. No. 1 Switzer, C S half NW SW Section 27-19n-6w, drilling 2,128 feet, stray 1,480 feet, slight show gas 1,493 feet, 1,506-08 feet, water 1,515 feet, Marshall 1,560 feet.

McClanahan Oil Co. No. 1 Clare County-State, SE NW SW Section 33-19n-6w, driving 10-inch at 45 feet.

Sun Oil Co. No. 1 Orla J. Reid, SE SE SW Section 18-19n-2w, location.

Brehm Oil Co. and Robert Bond No. 1 Kitchen, NE SE NE Section 20-19n-1w, Redrock 1,351-92 feet, shut down 1,404 feet.

Edward D. McHugh No. 1 Stevens, SE NE SE Section 8-19n-5e, drilling 452 feet, Red Rock 430 feet, Marshall 286-408 feet.

Champion Development Co. No. 1 Ealy Estate, NW NW NE Section 30-20n-8w, skid rig 20 feet north.

R. B. Tamblyn and Stork Oil Co. No. 1 McFarlan, SW SW NW Section 34-20n-3e, Traverse 2,098 feet, water 2,119-28 feet, drilling 2,395 feet.

Virgil R. D. Kirkham No. 2 Hawthorn & Miller and others, NW NE NW Section 6-22n-2w, drilling 525 feet.

Virgil R. D. Kirkham No. 1 St. Helen Oil Co., NE NE SE Section 36-22n-2w, driving 10-inch 308 feet.

Moser Oil Co. No. 1 Schentenheim and others, SE SE SE Section 36-23n-7w, total depth 1,425 feet, fishing 6-inch.

C. W. Teater No. 1 Gray, NE SW SW Section 32-23n-5w, stray 996 feet, 4,000,000 feet gas at 1,000-08 feet, water 1,010 feet.

Sun Oil Co. No. 1 Salling Hanson Co., Trustees, NE SE NE Section 2-23n-2w, Marshall 776 feet, water 776 feet.

Dr. L. W. Snow, Trustee No. 1 Moore, NE NE NE Section 13-29n-2w, Antrim 1,194 feet, shut down 1,203 feet.

Frank O. Summers, Trustee No. 1 Darling-Lyons Estate, SE SE SE Section 28-30n-3w, driving 10-inch 580 feet.

Barton & Williams No. 1 Youill Brothers, SE SE NE Section 9-32n-3w, Dundee 1,427 feet, shut down 1,427 feet.

Charles Van Keuren No. 2 Hiawatha Club, NE SW SE Section 27-44n-9w, old well drilled deeper, old total depth 240 feet, shut down 501 feet.

East Texas Fields

(Continued from Page 91)

3,642-52 feet, 60 bbls. H. L. Hunt No. 21-D Bradford, 3,551-3,601 feet, 13 bbls. E. W. and F. D. Jones No. 8 W. P. Moore, 3,632-40 feet, 60 bbls. Magnolia Petroleum Co. No. 13 A. Perkins, 3,605-45 feet, 48 bbls. Owenwood Oil Co. No. 8 P. W. Mullins, 3,762-70 feet, 60 bbls. Pine Petroleum Co. No. 12 Giles, 3,696-3,720 feet, 40 bbls. Sun Oil Co. No. 7 R. G. Mason, 3,621-39 feet, 35 bbls. Vaughn Production Co. No. 12 W. O. Alford, abandoned at 1,480 feet.

Upshur County—Longview Area

Humble Oil & Refining Co. No. 21 J. T. Lodden, 3,673-3,722 feet, 40 bbls.

Smith County—Joiner Area

J. C. Hawkins No. 2 J. H. Moore, 3,749-50 feet, 20 bbls. Sinclair Prairie No. 31 D. Wright, 3,716-85 feet, 40 bbls.

Fort Norman Operations Are Being Extended

CALGARY, Alberta.—Operations by Imperial Oil, Ltd., in the Fort Norman field in the North West Territories are being gradually extended to meet the steadily increasing demand of the Canadian North for petroleum products. Canoe and dog-train are being supplanted by airplane and motor boat, and steam- and diesel-powered craft haul freight barges on the northern waterways during the short navigation season.

To meet the demand for petroleum products, caches of oil and gasoline are placed at strategic points throughout the north. These supplies serve aviators, prospectors, traders and fishermen, as well as Eskimo and Indian hunters who are making increased use of power boats.

At Fort Norman the Imperial wells are operated about 90 days in the summer. Unrefined crude is used to drive diesel-powered units on boats and mining properties; and the refined product is widely used for heating and cooking throughout the north. With a maximum daily capacity around 350 bbls., the Fort Norman wells produced 5,053 bbls. in 1935, increasing to 5,339 bbls. in 1936 and 11,500 bbls. in 1937. During the summer months tank-barges carry oil on regular schedule to the Eldorado Mine on Great Bear Lake and across Great Slave Lake to the Gordon Lake and Yellowknife mining areas. Last year, an 8½-mile pipe line was laid to overcome the difficulty of portaging oil past the St. Charles Rapids on the Great Bear River.

Imperial Oil, Ltd., has a small refinery in the old field below Fort Norman. So far, the wells drilled in 1920 and subsequent years have proven sufficient to meet the demand, and no new drilling is forecasted in the immediate future.

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Made for 2", 2½" and 3" Tubing, and in lengths to handle any desired stroke. The pump is seated in the top of a common working barrel or in a special seating nipple in the tubing. It may also be seated with a mechanical seating device which requires no cups. And it can be used to pump from any level in the tubing when used in connection with the B-M-W ADMORE INSERT PUMP ANCHOR.

Installed without the necessity of pulling tubing. Used successfully in wells as deep as 6,000 feet. In the deeper wells the sucker rod load is much less than when standard size cups or plungers are used, while the loss in capacity is negligible due to more effective plunger stroke.

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Write for complete details.

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INCORPORATED

HOUSTON, TEXAS

Rocky Mountain Area

(Continued from Page 104)

Keith County

Twentieth Century Oil Co. No. 1 Stuken, C NW NW Sec. 21-14n-37w. Drlg. sh. 1,200 ft.

McPherson County

The Pawnee Oil Co. is moving in rotary for a test in the Tryon district in the C NW NW Section 28-18n-31w. Hole will start in the Ogallale formation and the Dakota will be its first objective. Location is about 15 miles north of the recent tests near McCook.

Pawnee Oil Co. No. 1, C NW NW Sec. 28-18n-31w. M.I.M.

Scotts Bluff County

Houston Pet. Co. No. 1 Judd, NE NE NE Sec. 15-22n-57w. Spd. and S.D.

Sioux County

Felmont Oil Corp. No. 1, C SW NE Sec. 21-27n-55w. Cg. for Dakota at 5,075 ft.

Union Oil Co. of Calif. No. 1 Agate-15, NW SE SE Sec. 15-28-55w. T.D. 6,890 ft.; rec. D.P.; C.O. 4,576 ft.

Pawnee County

Blazer & McClure et al No. 1 Allen, NW NE SW Sec. 16-1n-10e, set 5-in. csg. at 587 ft.; R.U.S.T. at 587 ft.; drlg. 590 ft.

Richardson County

H. C. Stevens and Ed Uhri No. 1 Harlow Est., C SE NE Sec. 32-1n-13e. S.D. 700 ft.

Hastings County

V. N. Souligny et al No. 1 Katzberg, C SW Sec. 26-7n-10w. Rlg.

McPherson County

Nebraska Oil Corp. No. 1 McConnell, SE SE NE Sec. 25-17n-31w. Set 4-in. csg. 1,735 ft.; drlg. 2,423 ft.

F. M. Knox et al No. 1 Childerston, C NW Sec. 28-18n-31w. M.I.M.

Dawes County

Huber Pet. No. 1 State, SW NE Sec. 16-33n-51w. Rotary; S.D.

Rocky Mountain Runs

WYOMING

Production estimates for week ending August 20:

	(Bbls.)
Salt Creek	15,720
Big Muddy	1,180
Badger Basin	140
Black Mountain	140
Byron	4,750
Cole Creek	190
Dallas Derby	350
Dutton Creek	70
Elk Basin	680
Frannie	620
Garland	2,650
Grass Creek	1,940
Hamilton dome	2,830
Hidden dome	110
Hudson	350
LaBarge	900
Lance Creek	12,540
Lost Soldier	1,710
Medicine Bow	3,400
Mule Creek	300
Midway	40
Oregon Basin	4,120
Osage	840
Pilot Butte	20
Quealy dome	750
Rock River	1,720
South Casper	480
Spindletop	10
Poison Spider	230
Teapot	20
Warm Springs	140
Wertz	700
Total Wyoming	59,640

MONTANA

Border	70
Cat Creek	590
Cut Bank	7,560
Dry Creek	1,240
Kevin-Sunburst	3,650
Pondera	450
Total Montana	13,560

COLORADO

Florence	250
Fort Collins and Wellington	340
Iles dome	2,110
Moffat	330
Orchard	40
Rangely	100
Tow Creek	160
Price	520
Total Colorado	3,850

NEW MEXICO

Cooper	4,990
Eaves	940
Eunice	25,520
Hardy	2,380
Hobbs	14,770
Jal	1,110
Langlie	4,270
Lynch	580
Lynn	890
Mattix	3,180
Monument	26,440
North Lynch	40
Penrose	5,480
Rhoades	170
Skelly	1,920
South Eunice	3,120
Vacuum	3,190
Artesia-Maljamar	6,670
Getty	300
Hogback	200
Rattlesnake	710
Table Mesa	60
Total New Mexico	106,930
Total Rocky Mountain region	183,980

Geophysical Options Secured In Southeastern States

In Alabama, northeast of Mobile, Union Producing Co. has secured geophysical option on 320,000 acres in Townships 1, 2, 3 and 4 south, Ranges 1, 2, 3 and 4 east, with 18 months to select acreage for a 7,000-foot test. Gulf Refining Co. completed a 20,000-acre block around Section 15-4n-1e, with Sun Oil Co. getting some protection in the block.

In Florida, Kenneth Nix and others of Lake City, Fla., secured geophysical option on 175,000 acres in Baker, Duval, Nassau and Union counties.

In Georgia, Kingwood Oil Co. of Effingham, Ill., secured geophysical option on 200,000 acres with two years to make selections, the bulk of the acreage being in Appling and Jefferson Davis counties.

In Mississippi, Harrison and Stone counties, Humble Oil & Refining Co. was reported offering to buy 10 sixteenth sections, 6,400 acres in all, from state and county authorities, all sixteenth sections in Mississippi being school lands; same company is leasing scattered blocks in Jackson County, which borders Alabama, the leases being on both sides of the Pascagoula River.

In Simpson County, Fred E. Courson and others have completed checking with seismograph, a 20,000-acre block in Township 10 north, Range 21.

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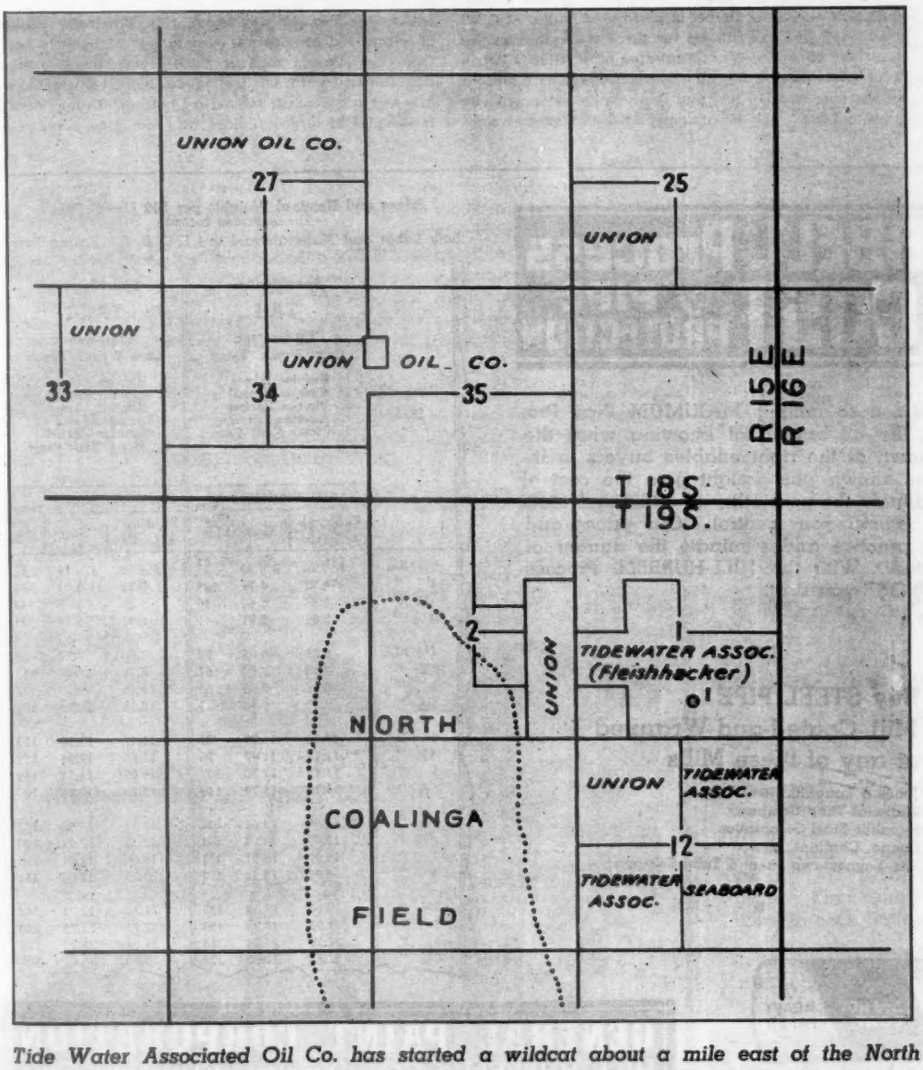
California Field Report

By L. P. STOCKMAN

Standard Opens Low Gravity Field in Cat Canyon Sector

LOS ANGELES, Calif., Aug. 22.—Standard Oil Co. appears to have discovered a new low-gravity oil field in the Cat Canyon district of Santa Barbara County, as its No. 1 Los Flores in Section 27-9-33, southeast of Santa Maria, has been completed pumping 504 bbls. of 14.3-gravity oil, cutting 4 per cent. This well, on a large lease owned in fee by Los Flores Land & Water Co., was drilled to 6,556 feet, but plugged back to 6,440 feet, and the hole finished with 1,080 feet of 6⅝-inch liner including 1,020 feet of perforated, landed at 6,440 feet. Standard has leases on a block of 4,600 acres. Standard is expected to proceed slowly with development work and this together with the large block indicates that the field will not prove a disturbing factor in state production. The oil is rather comparable with that produced in the Santa Maria Valley field and thus the coastal area will some time produce a large quantity of heavy asphaltic crude oil.

The Santa Maria Valley field which has caused major buyers a headache because of insistence of lessors that wells be produced in spite of inability of purchasing companies to find a favorable outlet is back in the limelight again this week. Petrol Corp. which has a contract to deliver approximately 1,000,000 bbls. of heavy asphaltic crude oil to Cities Service on the Atlantic Coast stepped into the Santa Maria Valley field last week and began trucking about 3,000 bbls. of crude per day from the field to its loading facilities in Estero Bay. This has forced Union Oil Co. to produce its offset wells and resume operation of its pipe line facilities. Petrol Corp. is taking this crude from Santa Maria Valley along with its own production from the Gato Ridge field and while no data has been given out by the company, inquiry has developed the fact that it is paying on an average of 30 cents per barrel for Santa Maria Valley crude and netting back about the same amount on its Gato Ridge oil. Current production of the Santa Maria Valley field is 9,900 bbls. per day but is expected to reach a higher level within two weeks. During the past week, Union Oil Co. completed No. 2 Mallory in Section 27-10-34, flowing 1,135 bbls. of clean 17.1-gravity oil per day through a 1-inch bean from 5,135 feet. The hole was finished with 525 feet of 6⅝-inch liner including 500 feet of perforated following the landing of an 8⅝-inch water string at 4,635 feet. Drilling has shown a substantial drop in this field and will probably continue at a low ebb for some time unless an outlet for this oil can be found. Hancock Oil Co. and R. R. Bush Oil Co., which are developing several leases jointly, are going to continue development work as rotary drilling equipment is being rigged up in No. 3 Bradley Lands in Section 26-10-34, and No. 4 Bradley Lands on the same lease. No. 3 California Lands of the same interests in Section 30-10-33, is being rigged up to pump and should be finished within another few days.



Tide Water Associated Oil Co. has started a wildcat about a mile east of the North Coalinga field and several miles northeast of Petroleum Securities Co.'s wildcat which discovered a new productive zone southeast of the East Coalinga field

Rio Bravo

Two new wells were completed in the Rio Bravo field and two more potential producers, Union No. 4-34 Kern County Land and General Petroleum Corp. No. 1 Wagoner, should be tanking oil before the close of this week. The wells completed were Superior Oil Co. No. 3 Geissinger in Section 35-28-25, and No. 2 Ramsey of George F. Getty, Inc. The former was brought in flowing 3,737 bbls. of very clean 40.5-gravity oil and 495,000 feet of natural gas per day through a 36/64-inch and a 30/64-inch bean from 11,500 feet, tubing pressure 1,640 pounds and a casing pressure 1,850 pounds. No. 2 Ramsey was completed flowing 7,000 bbls. of clean 35.8-gravity oil and 5,500,000 feet of natural gas per day from the Rio Bravo zone at 11,539 feet. This well was finished with a 7-inch string landed at 11,392 feet and 169 feet of 5-inch liner including 139 feet of perforated. Top of the oil zone was cored at 11,395 feet and production was secured through a 1-inch bean and a 12/64-inch bean, tubing and casing pressures 800 pounds and 1,850 pounds, respectively.

General Petroleum Corp. No. 1 Wagoner has been finished at 11,510 feet and the crew is running a swab. This company has rig up for No. 4 Van Ness in Section 2-29-25. Union Oil Co. has concluded drilling No. 4-34 Kern County Land at 11,315 feet and has landed a 7-inch water string on bottom. This well will be drilled ahead another 150 feet before being swabbed into production. No. 2-34 Kern County Land, which has been delayed with mechanical trouble for several months due to collapsed pipe, is being redrilled and has reached a depth of 9,280 feet. The company is making about 100 feet of hole per day and has about 2,000 feet to go before reaching the original depth. No. 5-34 Kern County Land of the same company has just passed the 7,000-foot level and consequently has about 4,000 feet of hole to make before being completed. Rig for No. 6-34 Kern County Land is in course of construction and drilling schedules call for spud on September 1. Superior Oil Co. No. 1 Heibling, the deepest well drilled in the Rio Bravo field, is going ahead at 13,755 feet, but has not found anything of interest since leaving 12,264 feet. This well is located in the extreme southeastern end of the field and while it failed to develop commercial production in either the present productive Rio Bravo zone or the new sand found at 12,220-64 feet it has indicated the possibility that a deeper zone might be expected on top of the structure which at present appears to be in the eastern end of Union's Kern County Land lease in Section 34-28-25.

Montebello

Three new wells were completed in the Montebello field of Los Angeles Basin. V-8 Oil Co. completed No. 1 M.B., flowing 985 bbls. of 35.4-gravity oil per day from the sixth zone which is in rocks of Miocene age.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	August 12		August 5			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	69,837	9,977	.....	.....	474,304	60,035
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	.....	.....	127,811	18,259	2,044,830	2,619,449
Kerosene	.....	.....	.....	.....	199,453	256,032
Foreign exports—						
Crude oil	210,437	30,062	622,855	88,979	14,826,607	8,735,482
Fuel oil	256,992	36,713	159,162	22,737	5,566,486	8,865,886
Diesel and gas oil	116,249	16,607	130,733	18,676	3,780,921	4,758,218
Gasoline	.....	.....	422,064	60,295	4,631,889	5,115,504
Kerosene	.....	.....	54,624	7,803	659,606	1,428,223
Lubricants	.....	.....	.....	.....	48,370	.....
Other unfinished oil	.....	.....	.....	.....	.....	824,290
Coastwise-domestic—						
Crude oil	219,994	31,428	368,507	52,644	7,418,562	2,697,250
Fuel oil	218,377	31,197	258,736	36,962	6,604,944	9,253,487
Diesel and gas oil	.....	.....	45,199	6,457	992,139	1,334,933
Gasoline	383,129	54,733	285,601	40,800	9,705,050	9,570,728
Kerosene	.....	.....	2,187	312	149,312	249,333

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	178,662	152,932
Gasoline	.....	.....	.....	.....	9,499	25,778
Asphalt	.....	.....	.....	.....	418,700	278,026
Lubricants	.....	.....	.....	.....	16,905	22,472
Foreign exports—						
Crude oil	.....	.....	273,416	39,059	3,463,645	1,883,746
Fuel oil	42,292	6,042	.....	.....	1,382,253	1,321,123
Diesel and gas oil	49,075	7,011	92,474	13,211	1,747,485	2,044,381
Gasoline	102,006	14,572	121,466	17,352	3,725,205	3,265,907
Kerosene	6,717	960	.....	.....	478,292	683,076
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	3,752	536	6,174	882	334,238	392,911
Coastwise-domestic—						
Fuel oil	126,814	18,116	71,248	10,178	3,816,728	3,971,628
Diesel and gas oil	28,605	4,086	18,496	2,642	891,431	663,892
Gasoline	211,540	30,220	197,628	28,233	4,701,237	2,934,772
Kerosene	8,990	1,284	10,254	1,465	320,083	162,675

This well, which was swabbed in before tubing had been run in the hole, is bottomed at 6,275 feet. Union Oil Co. finished the largest well in the field, but production coming from the fifth zone in the basal Pliocene was still cutting 11 per cent late in the week. Union's new producer is No. 2 Paul J. Howard, completed flowing 1,420 bbls. of 35.1-gravity oil through a 55/64-inch bean with bottom of the hole at 5,489 feet. The hole was finished with 104 feet of 6⅝-inch liner including 77 feet of 120 mesh perforations hung at 5,488 feet and 5,415 feet of 2½-inch tubing. The bean has been reduced to 18/64-inch and this has resulted in a reduction in production to 560 bbls. of oil and 295,000 feet of natural gas. Present pressures show 565 pounds on the tubing and 1,420 pounds on the casing.

Standard Oil Co. No. 1 McDonald, drilled on a sublease from St. Helens Petroleum Co., has been completed flowing 581 bbls. of 37.5-gravity oil and 5 bbls. of water per day through a 1½-inch bean. It was bottomed at 6,245 feet and the hole finished with 109 feet of 6⅝-inch liner including 70 feet of perforated landed at 6,242 feet. Standard has rigs up for three wells, one on the Kaufman fee lease. No. 2 Eggleston of St. Helens Petroleum Co. showed water on a formation test with bottom of the hole at 5,710 feet and the hole has been plugged back to 5,663 feet. The company's No. 28 Monterey completed a week or so previously, flowing through tester with bottom at 5,600 feet, has not been touched and is still flowing through the formation tester. Union Oil Co. should have No. 2 Wilcox ready for a production test within 10 days as it is scheduled for completion in the sixth zone of Miocene age and has already passed the 5,600-foot level. Union has started grading for No. 3 Howard & Smith in the west end of the property as an offset to No. 2 Manz of McVicars & Rood, and Standard's Harvey lease on which No. 3 will be started within 10 days.

Wilmington

A recent check indicated that about 100 wells will be drilled in the Wilmington field between now and the end of the year. Tideland development has not yet got under way, but the first step along this line will be taken within two weeks. Richfield Oil Corp. completed two wells on the Pacific Dock lease and began erection of three rigs on the property. Richfield's completions were Nos. 4 and 9, the former flowing 5,280 bbls. of 22.9-gravity oil per day and the latter 2,980 bbls. of 24.5-gravity oil daily. No. 4 Pacific Dock was carried down to 4,241 feet and then plugged back to 4,163 feet before completion. It was brought in flowing without any restriction but later flowed through a 20/64-inch bean at the rate of 1,750 bbls. daily. No. 9 Pacific Dock was bottomed in the Terminal zone at 3,636 feet and by reducing the bean to 21/64-inch production has been cut to 740 bbls. per day.

Tide Water Associated Oil Co. failed to find any commercial production above the schist basement in No. 1 Banning in the northern end of the field but completed it in the Ranger zone at 3,485 feet after plugging back the hole from 6,761 feet. No. 1 Banning has been finished pumping 115 bbls. of relatively clean 14.5-gravity oil daily. General Petroleum Corp. completed another excellent well on the Harbor Community lease when No. 43 was brought in flowing 731 bbls. of clean 16.9-gravity oil through a 28/64-inch bean from the Ranger zone at 3,000 feet. This new well was finished with 499 feet of 6⅝-inch liner including 412 feet of 60 mesh landed on bottom. Union Pacific Railroad Co., largest holder of productive acreage in

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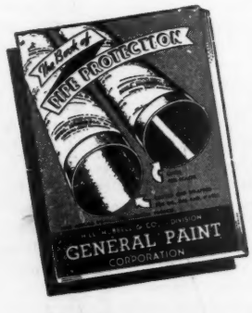

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Pipe Size	Specification TA-1 — Telegraphic Code Word: Tabor: 1. Biturine Primer 2. Biturine Enamel 3. Biturine Enamel 4. Asbestos Felt 5. Heavy Kraft Paper			Specification TAX-1 — Telegraphic Code Word: Talon: 1. Biturine Primer 2. Biturine Enamel 3. Biturine Enamel 4. Asbestos Felt 5. Biturine Enamel 6. Heavy Kraft Paper		
	BASING PRICES		Nom. Wgts. Lbs.	BASING PRICES		Nom. Wgts. Lbs.
	Pittsburgh or Lorain	Gary		Pittsburgh or Lorain	Gary	
¾ Nom.	$ 4.20	$ 4.25	23	$ 4.53	$ 4.59	31
1 "	4.73	4.79	29	5.15	5.23	39
1¼ "	5.33	5.40	36	5.85	5.95	48
1½ "	5.83	5.91	41	6.43	6.54	55
2⅜ O.D.	6.83	6.93	50	7.58	7.72	68
2⅞ "	7.78	7.90	61	8.70	8.87	83
3 "	8.23	8.36	65	9.18	9.36	87
3½ "	9.25	9.40	75	10.33	10.54	101
4 "	10.22	10.39	85	11.47	11.70	115
4½ "	11.27	11.47	96	12.68	12.94	129
5 "	12.48	12.70	107	14.05	14.35	145
5 5/16 "	13.50	13.74	119	15.25	15.58	160
6 "	14.40	14.66	128	16.27	16.62	173
6⅝ "	15.47	15.76	141	17.55	17.94	190
7 "	16.40	16.71	151	18.60	19.01	203
8 "	18.03	18.38	171	20.53	21.00	231
8⅝ "	19.02	19.39	183	21.72	22.23	248
9 "	19.93	20.33	193	22.75	23.28	260
10 "	21.50	21.94	214	24.63	25.22	289
10¾ "	22.62	23.09	229	25.98	26.61	309

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the Wilmington field, has completed No. 87 flowing 1,390 bbls. of very clean 27.4-gravity oil from the Terminal zone at 3,955 feet. Superior Oil Co. has completed one rig for the first of two wells to be drilled on the Seaside School lease in the Long Beach harbor section of the field and should have this well ready for a production test. No. 1 MacKallister of Crail Brothers, Inc., failed to result in a natural flow from the Ford zone at 5,718 feet and has been plugged back to 5,560 feet. Swabbing operations resulted in a recovery of around 150 bbls. and preparations are under way to rig up pumping equipment.

Torrance

Six wells were put on production in the lower zone in the Torrance field during the current week but only one of this group was drilled from the grass roots. This new well was Packard Oil Co. No. 3 Lomita, finished flowing 206 bbls. of 26.4-gravity oil cutting 2 per cent daily from 4,950 feet. The 6⅝-inch water string was cemented at 4,803 feet and the well brought in flowing through a 39/64-inch bean. The initial production of wells completed in the Torrance field this week was unusually small in comparison with other recent completions. The number of new wells started continues to be larger than the aggregate completions and abandonment. Henry Wertalla completed the largest producer this week as his No. 1 Lomita was completed flowing 320 bbls. of 26.8-gravity oil cutting 4 per cent daily from 4,962 feet. This well, which was redrilled and deepened from the upper zone and finished with a combination 6⅝-inch and 5-inch liner, was brought in flowing through a 48/64-inch bean. The 5-inch liner in the bottom of the hole totaled 1,460 feet and contained 58 feet of perforated.

W. A. Kirk No. 12 Lomita finished at 4,970 feet with a 5½-inch liner showed an initial production of 251 bbls. of 26.6-gravity oil cutting 4 per cent under a natural flow. Cal-Oak Oil Co. No. 1 Torrance was completed flowing 198 bbls. of relatively clean 26.4-gravity oil per day through a 40/64-inch bean from 4,977 feet. The hole was finished with 80 feet of 5½-inch liner including 60 feet of perforations landed on bottom. Calridge Oil Co. No. 1 Meyer, drilled down to 5,012 feet and then plugged back to 4,994 feet, was good for 86 bbls. of very clean 26.3-gravity oil per day through a

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

	August 12		August 5			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	69,837	9,977	.....	.....	474,304	60,035
Diesel and gas oil	.....	.....	.....	.....	178,662	329,658
Gasoline	.....	.....	127,811	18,259	2,054,329	2,645,227
Kerosene	.....	.....	.....	.....	199,453	256,032
Asphalt	.....	.....	.....	.....	418,700	278,026
Lubricants	.....	.....	.....	.....	16,905	22,472
Foreign exports—						
Crude oil	210,437	30,062	896,271	128,039	18,290,252	10,619,228
Fuel oil	299,284	42,755	159,162	22,737	6,948,739	10,187,009
Diesel and gas oil	165,324	23,618	223,207	31,887	5,528,406	6,802,599
Gasoline	102,006	14,572	543,530	77,647	8,357,094	8,381,411
Kerosene	6,717	960	54,624	7,803	1,137,898	2,112,299
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	3,752	536	6,174	882	382,608	392,911
Other unfinished oil	.....	.....	.....	.....	.....	824,290
Coastwise-domestic—						
Crude oil	219,994	31,428	368,507	52,644	7,418,562	2,697,250
Fuel oil	345,191	49,313	329,984	47,141	10,421,672	13,225,115
Diesel and gas oil	28,605	4,086	63,695	9,099	1,883,570	1,998,825
Gasoline	594,669	84,953	483,229	69,033	14,406,287	12,505,500
Kerosene	8,990	1,284	12,441	1,777	469,395	412,008

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SHEAR-RELIEF VALVE

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Monebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.90	.83	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	$1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	...	...	...	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29	...	...	...	...	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.36	...	1.42	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.40	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29 29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

22/64-inch bean. Production of this well was much smaller than the average initial but on the other hand the cut was substantially less than 1 per cent. Rico Oil Co. No. 1 Victoria has been completed pumping 71 bbls. of 26.5-gravity oil per day with bottom of the hole at 4,975 feet. Most of the wells now being started in the Torrance field consist of new holes started from the grass roots although each week sees three or four new rigs going up over old abandoned holes. It is also significant to note that despite the consistent completion of new wells in this field production does not seem to show any increase indicating that the normal decline of the zone is approximately 1,500 bbls. per day. New completions have been sufficient to maintain the level at approximately 12,750 bbls. per day for the lower zone.

East Coalinga

Two drilling wells in the Guijarral Hills section of the East Coalinga field are expected to soon pick up the Avenal zone of Eocene age, which Petroleum Securities Co. proved to be highly productive on June 30 last. Both wells were within 100 feet of where the zone is expected to be topped. Universal Consolidated Oil Co. No. 1 Leavitt-Hintze in Section 12-20-15, logged top of the Kreyenhagen zone at 5,280 feet and on this basis appears to be running 433 feet higher structurally than the discovery well of Petroleum Securities. Universal found the transition zone at 6,276-6,300 feet and topped the upper zone that proved unproductive in the discovery well, at 6,305 feet. No. 1 Leavitt-Hintze at 6,399 feet should hit the productive Gatchell zone with the next 75 feet. No. 88 Grimes of Petroleum Securities Co. at 6,638 feet appears to be running a little lower structurally than the discovery well which was completed with bottom of the hole at 6,893 feet. Top of the Gatchell zone was cored in No. 1 Gatchell at 6,689 feet. No. 1 Hight of Superior Oil Co. at 7,270 feet has not yet found the top of the first zone. Top of the Kreyenhagen was cored at 6,430 feet or 1,150 feet deeper than this formation was logged in Universal Consolidated No. 1 Leavitt-Hintze. F. C. Goetz has cored top of the Kreyenhagen in No. 1 Medford in Section 10-20-15, at 5,130 feet and this outpost, 2 miles west of present development, may bear watching. No. 19 Mohawk of Texas Co. in Section 12-20-15, has been plugged back from 4,425 feet to 4,331 feet for a test of the productive possibilities of the upper zone. The hole will be carried down to the Gatchell zone but the company decided to test the upper zone. Production was secured in this district by an overlap discovered by very careful and painstaking effort and ability by the geologists involved and this will probably result in similar work in the general area. No. 1 Gatchell of Petroleum Securities proved itself capable of flowing 20,000 bbls. per day.

Rosecrans

Superior Oil Co. completed another excellent well in the Rosecrans field this week when No. 9 Maxwell was brought in flowing 1,194 bbls. of clean 32.3-gravity oil per day along with 600,000 feet of natural gas, from the O'Dea zone at 7,658 feet. It was drilled from spud to completion in 29 days and was finished flowing through a 34/64-inch bean, tubing pressure 250 pounds and casing pressure 440 pounds. The hole was finished with 123 feet of 6⅝-inch liner including 106 feet of 200 mesh landed on bottom. The crew from this well has been moved over to No. 10 Maxwell and preparations are under way for an early spud. Several new wells are scheduled to begin drilling within a few days and this group will be followed by several others. Included in the list of wells getting under way are Bankline Oil Co. No. 1 Kirby, Barnsdall No. 10 Rosecrans, Exeter Oil Co. No. 4 Higgins, F. E. Fairfield No. 1 Abel, Howard Oil Co. No. 2 Gordon and Union Oil Co. No. 25 Rosecrans.

San Joaquin Basin

Standard Oil Co. completed No. 11-15 Kern County Land in the Greeley field of Kern County, flowing 700 bbls. of clean 33.2-gravity oil per day on gas lift from 7,735 feet. The production of this well was disappointing but does not indicate that maximum development has been reached. Tide Water Associated Oil Co. has abandoned its wildcat in the McFarland district of Kern County as a duster at 9,190 feet. This test well, located in Section 17-26-25, topped the Miocene at 6,700 feet and after finding the Vedder zone barren at 9,080 feet decided to pull out. Shell Oil Co., which drilled No. 82-25 Kern County Land to 10,061 feet in this area, abandoned its wildcat last week. Top of the Miocene was logged in No. 83-25 Kern County Land in Section 35-26-25, at 5,939 feet and top of the Olcese was cored at 6,970 feet with top of the Vedder at 8,195 feet and top of the Walker at 9,861 feet. This indicates that Shell's wildcat was located higher structurally than Tide Water Associated's test. Up in Glenn County, Ohio Oil Co. plugged back No. 1-A Williard in Section 18-20-2, from 6,014 feet to 2,364 feet and then made a formation test. The well, located not far from a test that indicated the presence of a substantial accumulation of natural gas, flowed at the rate of 6,000,000 feet of gas per day along with considerable salt water. The company abandoned the lower part of the hole and will attempt to develop commercial production of dry gas in the upper horizon.

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Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Aug. 20.—Pipe line runs to Calgary refineries from the Turner Valley field in July reached a new high of 566,783 bbls., an average of 18,283 bbls. per day compared with 418,287 bbls., to average 13,943 bbls. per day in June. The previous high figure was 448,363 bbls. in May, average 14,464 bbls. per day. July deliveries to Imperial Oil Refineries were 397,596 bbls., including 29,059 bbls. of naphtha and 368,537 bbls. of crude. British American Oil Co. took 169,187 bbls. of crude.

Latest official figures show aggregate potentials of 51,878 bbls. of crude per day from 55 producers. Recent completions and acidizations would add an estimated 4,000 bbls., making the field potential 55,878 bbls. This does not include naphtha production, amounting to over 1,000 bbls. a day.

Turner Valley deliveries for the seven months of 1938 total 2,976,884 bbls. Deliveries for the entire 12 months of 1937 amounted to 2,363,787 bbls.

Turner Valley Producers

In Section 32-18-2w5, South Turner Valley, West Turner Petroleums No. 2, LSD 7, is testing after second acidization, with indications of a 2,500-bbl. producer, with considerable gas. Davies Petroleums No. 1, LSD 2, Section 29-18-2w5, looks good for about 1,500 bbls. after acidizing.

Royalite Oil Co. No. 31, LSD 6, Section 29-18-2w5, finished 474 feet in the Madison limestone at 8,064 feet. It developed about 350 bbls. a day, and has been acidized and is making official test.

Tests in the Lime

In Section 5-19-2w5, West Central Turner Valley, Royalite Oil Co. No. 33, LSD 2, mented casing in the top of the Madison lime at 7,254 feet. In Section 29-18-2w5, Commoil No. 2, LSD 10, is below 7,137 feet after getting the Madison at 7,196 feet. In Section 20-18-2w5, York Oils No. 1, LSD 2, got the lime around 7,000 feet and cemented casing a few feet in. In Section 17-18-2w5, Royalite Oil Co. No. 32, LSD 8, finished in the black lime at 7,308 feet, 508 feet from the top of the Madison, and is clearing and testing production. This is the first test to get production south of the Highwood River.

Deep Test Gets Lime

About 2 miles west of the earliest crude producers, Okalta Oil Co. No. 6, LSD 3, Section 30-18-2w5, got Madison lime at 9,731 feet and cemented casing at 9,740 feet. Small oil and gas shows were continuous in the last 300 feet of drilling. The lime is about 2,200 feet deeper than in the deepest well in the proven west flank crude area, and is expected to go to 10,200 feet before the main porous horizon is reached.

West Flank Drilling

In West Central Turner Valley, Royalite Oil Co. No. 34, LSD 7, Section 5-19-2w5, is below 2,715 feet.

In Section 13-19-2w5, Sun Ray Oil Development Co. No. 1, LSD 8, received the first drilling permit under the new regulations, and is hauling timbers and equipment. Test will spud by September 1, and is financed by Montreal interests which are planning a series of tests.

In Section 32-18-2w5, Davies Petroleums No. 4, LSD 10, is below 5,050 feet and getting close to the Blairmore formation. West Turner Petroleums No. 3, LSD 6, is below 4,669 feet. In Section 29-18-2w5, Command Oils No. 1, LSD 14, is below 4,094 feet. In Section 20-18-2w5, Consolidated Royalties No. 1, LSD 14, below 7,240 feet; Producers Crude Corp. No. 1, LSD 11, below 4,360 feet; Sunset Oils No. 2, LSD 7, below 6,980 feet; in Section 17-18-2w5, Anglo-Canadian Oil Co. No. 3, LSD 10, below 2,443 feet; in Section 16-18-2w5, Brown Oil Corp. No. 5, LSD 12, below 5,469 feet; Richwell Oil Co. No. 1, LSD 5, below 4,813 feet; Royal Canadian Oil Co. No. 2, LSD 4, below 3,275 feet; in Section 9-18-2w5, D. & D. Oils No. 1, LSD 12, on Calgary & Edmonton Corp. acreage, spudding.

In the far south, Anglo-Canadian Oil Co. No. 2, LSD 2, Section 33-16-2w5, is below 5,649 feet.

West of the proven field, but north and east of Okalta No. 6 deep test, Anglo-Canadian Oil Co. No. 1, LSD 16, Section 31-18-2w5, is below 4,927 feet.

North Turner Valley

In North Turner Valley, Phillips Royalties No. 1, LSD 16, Section 16-20-3w5, is in the Blairmore formation below 7,400 feet. Home Oil Co. No. 2 Millarville, LSD 6, Section 33-20-3w5, is in the lower Benton below 5,270 feet.

In Section 27-20-3w5, Royalite Oil Co. No. 35, LSD 7, is spudding. Location is in the same section as Royalite No. 29 Turner Basin, which has a potential of 1,012 bbls. a day.

Increase in Proration

Effective at 8 a.m. on August 15, allowable production of Turner Valley crude was increased from 37 to 48 per cent of potential, under an order of the Alberta Oil and Conservation Board. The increase is a temporary measure, and further changes are expected when the new official tests and the market survey being made by the board are completed. Chairman W. F. Knode stated the order was issued to meet a situation caused by a quick upturn in the market for Turner Valley crude.

The new official tests are practically complete and are being studied in relation to the demand for crude. Within a short time a new order will be issued on the basis of this information. With an established potential between 55,000 and 56,000 bbls. a day, the increase represents an additional 6,000 bbls. daily allowable production.

The upturn in the market was apparently due to the seasonal demand for petroleum products in the prairie

(Continued on Page 130)

No doubt

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RIO BRAVO FIELD, KERN COUNTY, CALIFORNIA

Compiled by The Oil and Gas Journal

Approved name

Rio Bravo field.

Location

Kern County, California; 15 miles west and 5 miles north of Bakersfield. Development to date has been confined to sections 34 and 35, Township 28s, Range 25e, and sections 1 and 2, Township 29s, Range 25e. The productive area will probably extend into section 27-28-25.

Type of country

Typically flat or very gently rolling San Joaquin Valley topography. Elevations in the field vary from 327 to 338 feet above sea level. The surrounding plains are essentially treeless grazing land. Rainfall in spring often reaches deluge proportions, but there is no precipitation during most of the year. Soft water is readily available in water wells.

Method of discovery

Presence of structure was revealed through a seismograph survey carried on by Western Geophysical Co. for Union Oil Co., but interest was attracted to the area by a slight surface well, which is apparently related to the anticlinal structure at depth. The seismograph indicated an anticline with major axis trending southeast-northwest. The discovery well was located at the point believed to be the apex of the structure, but subsequent drilling has shown the highest point to lie somewhere northwest of the discovery well.

History of development

Drilling of the discovery well, Union Oil Co. No. 1-34 Kern County Land, started on March 29, 1937. The same company had drilled a 6,053-foot dry hole 1½ miles to the southwest in 1934. Discovery of Ten Section field by Shell Oil Co. late in 1936, and of Greeley field by Standard Oil Co. early in 1937, had served to revive interest in the Rio Bravo area.

Production was expected in the Greeley sand, which had been found in the Greeley field 5 miles to the southeast at a depth of 7,900 feet. This horizon was expected at Rio Bravo between 8,600 and 9,000 feet, but in this interval only shale was logged. However, drilling was continued because shows of oil had been found in a deeper sand by Continental Oil Co. No. 1-B KCL near Rosedale.

Top of the sand, which has since been named the Rio Bravo sand, was logged at 11,240 feet. After drilling 55 feet of very porous oil sand and 7 feet of gritty siltstone, the well was bottomed at 11,302 feet. It was brought in on November 4, 1937, for a flow of 2,400 bbls. per day through a 40/64-inch choke. At this rate it was allowed to flow for several months, and was at that time the world's deepest commercial producer.

In spite of the great depth of the producing sand, development of the pool became quite rapid. The productive area is divided among four large companies. At the present time Superior Oil Co. has nine producers with three drilling; Union Oil Co. has three producers and two drilling; General Petroleum Corp. has one producer and two drilling, and George F. Getty, Inc., has one producer and one drilling.

All tests have yielded clean oil with potentials rated at 6,000 bbls. per day with the exception of Superior Oil Co. No. 1 Anderson and No. 1 Helbling. The former is located on the extreme east flank of the structure and cored gray sand in the bottom of the hole, from which water was produced. The Helbling well, in the extreme southeast end of the field, failed to find productive sand corresponding stratigraphically to that found in the other wells. A deeper sand was found, but this produced gas, salt water, and a show of oil. Since this well was not a commercial producer, it is being deepened in search of deeper sands.

Type of structure

The Rio Bravo field is located on the Greeley-Rio Bravo-Shafter-Wasco structural trend, which lies close to the central axis of the San Joaquin Valley and strikes northwest-southeast. Present data indicate that the Rio Bravo structure is an elongated dome on the anticlinal trend. However, the northwestern part of the structure has not been drilled and must be inferred from seismograph evidence.

Drilling to date has revealed that the structural closure is at least 250 feet. The southeastern portion of the structure has been fairly well outlined, but no tests have been drilled on the northwest dip. Union Oil Co. No. 2-34 and 3-34 are both north of the discovery and they topped the sand 20 and 23 feet higher than the discovery, respectively. This indicates that the field may extend a considerable distance in the northwesterly direction.

The portion of the structure so far developed is quite regular, with flanks nearly symmetrical. The average dip on the flanks at right angles to the major axis is about 15 degrees, while the southeasterly dip along the strike averages 3 degrees.

Oil and gas sands

The first two Rio Bravo completions produced from the same zone, which is 55 feet wide of solid oil sand showing a porosity of 28 per cent and a permeability of 750 millidarcys. The discovery well and the second well, which was Superior Oil Co. No. 1 Geisinger, both logged this sand at the same depth and both found it underlain with gritty siltstone.

The third completion, Superior Oil Co. No. 1 Ruhl, drilled through the siltstone, which was only 8 feet thick, and took in a second zone. For several days before the completion of the Wasco well No. 1 Ruhl was the world's deepest producing well, but since the company disclosed no information it received no notoriety. Its chief importance is that it proved the existence of oil sand below the first interval. The second interval is about 190 feet thick.

A third sand interval was discovered recently by Superior Oil Co. No. 1 Helbling, but it was not commercial in the location penetrated. It is quite certain that this interval will be found commercial in more favorable structural locations. Its thickness is not known, since the log has not been disclosed by the operating company.

The term "Rio Bravo sand" usually includes both of the two intervals which are productive at present. However, Superior Oil Co. terms the upper interval the Rio Bravo and the thicker second interval the "Ruhl sand." Similarly, the deeper noncommercial sand is referred to as the "Helbling" sand.

In the discovery well good shows of oil were found in what is known as the Olcese zone at a depth of 10,269 feet. A production test was made, and while commercial production was not obtained at this location the zone will justify further testing at other locations when the Rio Bravo sand ceases to yield flowing wells.

Stratigraphy

In the discovery well the Mulinia zone was logged at 3,793 feet; top of the Miocene (Reef Ridge) at 7,620 feet; top of the McLure shale at 8,000 feet; top of the lower Fruitvale at 8,902 feet. The tops of the Valvulineria California zone and the Valvu-

Service on New Fields

lineria Robusta zone both occurred in uncored sections at estimated depths of 9,675 feet and 9,800 feet, respectively.

At 8,690 feet the top of what is apparently the equivalent of the Greeley sand was found. This is brownish siltstone with occasional thin lenses of fine sand.

All of the producing strata at Rio Bravo are of Miocene age, and they are often correlated with the Vedder sand of the Round Mountain field east of Bakersfield. This correlation has not been accepted, but it seems evident that the two sands occur at approximately the same position in the Miocene.

The Rio Bravo sand is believed to be of great areal extent. It is the same as, or the equivalent of, the deep sand recently discovered in the Greeley field and also the producing sand of the Wasco field. Its presence is suspected in all of the valley-floor fields, but due to its great depth it has not been reached in many locations.

Casing practice

In most Rio Bravo wells a string of 13⅜-inch casing is set at 1,500 feet or deeper. It is then customary to carry open hole to the top of the sand, which is found between 11,215 feet and 11,465 feet. The size of hole is usually reduced at about 9,000 feet to 9 inches. Six and five-eighths inch casing is usually cemented above the sand. Five-inch aluminum-alloy 120-mesh slotted liners are used in most wells, but since the sand tends to stay in place some wells are completed without liners.

Drilling practice

Several distinct departures are made from usual drilling practice in the Rio Bravo field. Most wells are drilled entirely with rock bits although most of the drilling is in fairly soft shale. Charts indicate that better speed is made under this practice. Also, under the system developed by Superior Oil Co. the bits are heavily weighted with as much as 365 feet of drill collar weighing 147 pounds per foot. Two-thirds of the total drill-collar weight is applied to the bit while the other third is supported to prevent whipping of the drill pipe.

Exceptionally good time is made in drilling many wells. Some tests have reached 10,000 feet in 30 days, and some have been completed in less than 50 days.

Drilling equipment used is the heaviest available. Most rigs use 178-foot derricks and three large steam engines. A 14 by 14 engine is used on the drawworks, a 12 by 12 engine for the underfloor rotary drive, and another 12 by 12 engine for the standby hoist.

Completion practice

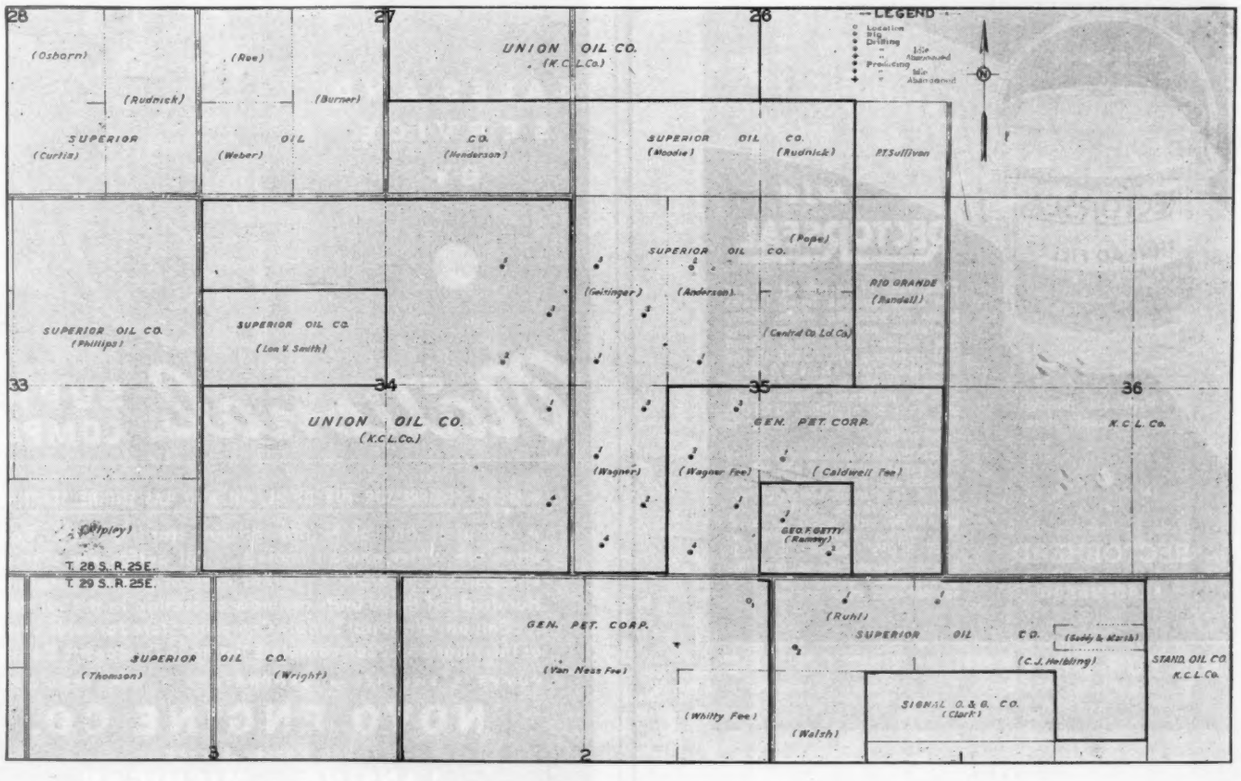
Before being put on production all Rio Bravo wells are equipped with 2½-inch tubing which extends down nearly to the top of the liner. Surface chokes are installed on the christmas trees, and the wells are never produced through the casing strings. When producing through the tubing, the chokes are never opened more than a fraction of an inch.

Potentials and allowables

Potentials are never taken on Rio Bravo wells. The field allotment is distributed each month equally among all of the producers. The current per well allowable is 290 bbls. per day. Each well is given an arbitrary potential of 6,000 bbls. per day, but it is believed that most of the wells are capable of producing more than twice that amount on open flow. Apparently all danger of wild wells is avoided by the conservative flowing practice.

Gasoline plant

Natural gas from the Rio Bravo wells is processed in a new



Service on New Fields

gasoline plant jointly owned by Superior Oil Co. and Union Oil Co. The plant is built for a maximum capacity of 20,000,000 feet per day, and is designed to take gas from four different field systems operated at different pressures.

Gas-oil ratios

Gas-oil ratios average 800 to 1,000 cubic feet per barrel of oil.

Gasoline content of natural gas:

Rio Bravo gas produced with the oil carries an average of 1.4 gallons of gasoline per 1,000 cubic feet.

Oil analysis

Sample 1:	
Gravity	38.9
Per cent of 425 endpoint, 56.8-gravity gasoline	44.8
Per cent of 725 endpoint, 31.7-gravity gas oil	32.9
Per cent of 35-second Saybolt-Furol viscosity residuum at 210° F. (13.7 gr.)	22.2
Per cent sulfur	0.28
Sample 2:	
Gravity	40.7
Per cent 425 endpoint, 57.1-gravity gasoline	49.1
Per cent 725 endpoint, 33.3-gravity gas oil	30.1
Per cent of 203-second Saybolt-Furol viscosity residuum at 122° F. (17.6-gravity)	20.2
Per cent sulfur	0.40

Knock rating on Rio Bravo gasoline ranges from 60 to 61.

Present status of field

With 14 wells completed the Rio Bravo field has produced about 828,000 bbls. of oil. Drilling activity has been reduced because of the low allowables, and most companies are doing only enough drilling to meet lease requirements. All drilling is being carried on by drilling departments of the oil companies, though several wells were drilled by Loffland Brothers Drilling Co. for Superior Oil Co. during the more active drilling era of the field.

Prospects

It is anticipated that the productive acreage of the Rio Bravo field will approximate 1,800 acres. With the 20-acre spacing program in effect, development would call for about 90 wells. However, it is unlikely that this number will be closely approached because development is being carried on slowly and as the flowing pressures decline drilling will become less attractive.

No reliable estimates of future production have been made as yet.

Of special interest is the deep test, Superior Oil Co. No. 1 Helbling, which is now drilling below 13,000 feet. This test may be carried to 15,000 feet or deeper. Its structural position is not considered desirable, but if it encounters sands or other suitable reservoir rocks the value of the field, as well as other nearby structures, will be enhanced.

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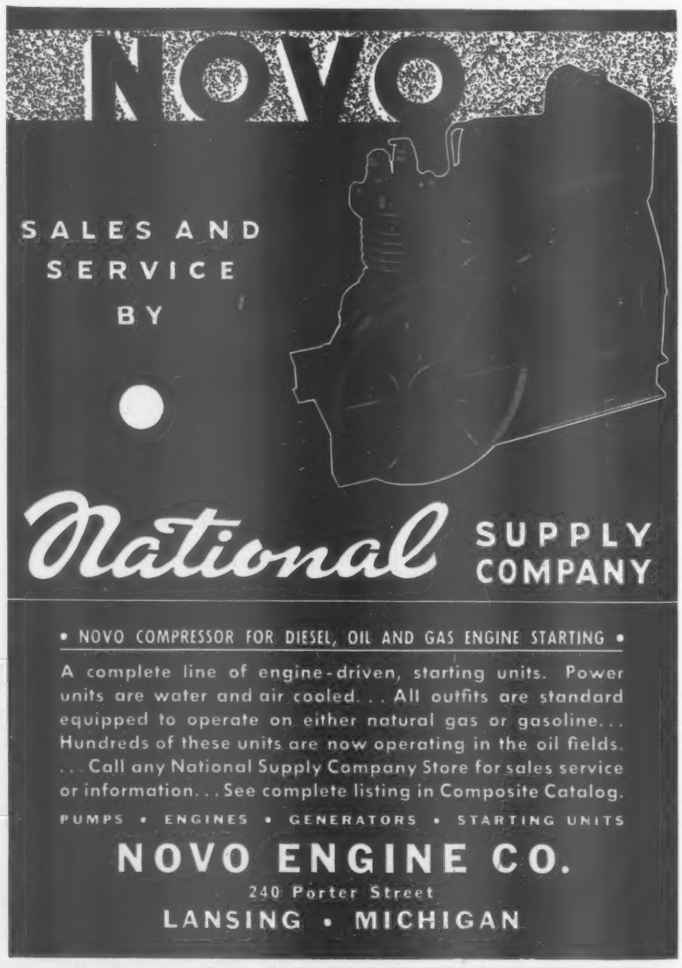
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Summary of Operations in All Fields, July

SUMMARY OF OPERATIONS

Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Eastern field	265	580	28	42
Lima	1	0	1	0
Central Ohio	70	444	26	28
Indiana	9	50	6	2
Western Kentucky	55	7,713	17	4
Eastern Kentucky	31	270	1	13
Michigan	87	7,827	41	1
Illinois	143	26,171	27	0
Kansas	91	14,891	30	5
Oklahoma	133	15,216	61	7
No. Central Texas	263	68,746	89	5
West Texas	142	125,553	15	0
Texas Panhandle	29	8,537	2	8
East Texas	123	5,905	5	0
East Central Texas	25	3,108	8	1
East Texas Border	12	3,990	0	0
Southwest Texas	280	43,145	94	8
Gulf Coast Texas	157	57,172	30	3
Gulf Coast La.	56	13,834	19	2
North Louisiana	63	17,060	15	12
Arkansas	14	9,990	0	0
Montana	11	716	0	2
Wyoming	22	4,732	9	3
Colorado	2	250	1	0
Utah	0	0	0	0
New Mexico	38	10,193	2	1
Nebraska	0	0	0	0
Total July	2,122	446,097	527	147
Total June	2,104	555,403	550	137
Difference	18	109,306	23	10

Rigs and Wells Drilling

Field—	Rigs	Drig.	Ttl.
Eastern field	57	298	355
Lima	0	11	11
Central Ohio	37	103	140
Indiana	3	40	43
Western Kentucky	2	72	74
Eastern Kentucky	5	32	37
Michigan	20	128	148
Illinois	23	195	218
Kansas	34	198	232
Oklahoma	61	294	355
North Central Texas	101	335	436
West Texas	85	295	380
Texas Panhandle	18	101	119
East Texas	31	55	86
East Central Texas	11	40	51
East Texas Border	11	15	26
Southwest Texas	57	185	242
Gulf Coast Texas	29	124	153
Gulf Coast Louisiana	16	123	139
North Louisiana	29	75	104
Arkansas	12	34	46
Mississippi	7	3	10
Florida	1	1	2
Montana	3	61	64
Wyoming	8	52	60
Colorado	3	30	33
Utah	1	5	6
New Mexico	18	127	145
Nebraska	0	7	7
North Dakota	0	1	1
Total July	683	3,040	3,723
Total June	638	3,000	3,638
Difference	45	40	85

KANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Barber	1	0	0	1	1	2
Barton	17	3,410	4	0	5	22
Butler	3	60	1	0	1	13
Coffey	0	0	0	0	1	0
Cowley	5	1,392	1	0	2	11
Dickinson	0	0	0	0	0	1
Ellis	3	977	1	0	4	10
Ellsworth	3	304	2	0	1	1
Ford	0	0	0	0	0	1
Graham	0	0	0	0	0	1
Grant	0	0	0	0	0	1
Greenwood	3	0	3	0	1	9
Harvey	1	70	0	0	0	2
Jackson	0	0	0	0	0	1
Kingman	0	0	0	0	0	1
Kearny	1	0	0	1	0	0
Lane	1	0	1	0	0	0
Marion	0	0	0	0	1	3
McPherson	2	401	0	0	1	6
Meade	0	0	0	0	1	1
Ness	1	167	0	0	0	4
Ottawa	0	0	0	0	0	1
Pawnee	1	115	0	0	0	0
Pratt	1	0	1	0	0	0
Reno	2	294	0	0	1	9
Rice	10	2,003	2	1	7	21
Riley	0	0	0	0	0	1
Rooks	2	0	2	0	0	7
Rush	0	0	0	0	0	1
Russell	8	1,555	3	0	1	30
Sedgwick	1	158	0	0	0	6
Scott	0	0	0	0	0	1
Stafford	15	3,352	4	0	3	14
Stevens	2	0	0	2	0	1
Sumner	1	486	0	0	1	2
Thomas	0	0	0	0	0	1
Woodson	7	147	5	0	2	13
Ttl. July	91	14,891	30	5	34	198
Ttl. June	157	57,374	43	6	23	187
Difference	66	42,483	13	1	11	11

OKLAHOMA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Atoka	0	0	0	0	0	1
Beckham	3	0	3	0	0	0
Caddo	3	257	0	0	3	14
Canadian	0	0	0	0	0	1
Carter	6	302	2	0	1	15
Choctaw	0	0	0	0	0	1
Cleveland	1	454	0	0	0	0
Coal	0	0	0	0	0	1
Comanche	2	0	2	0	0	4
Cotton	0	0	0	0	0	1
Creek	11	178	6	0	3	36
Ellis	0	0	0	0	0	1
Garfield	0	0	0	0	1	2
Garvin	1	160	0	0	1	2
Grady	0	0	0	0	1	2
Greer	0	0	0	0	0	1
Hughes	5	0	4	1	0	6
Jackson	0	0	0	0	0	1
Jefferson	3	8	2	0	1	4
Kay	0	0	0	0	1	6
Kingfisher	0	0	0	0	0	1
Kiowa	4	0	4	0	0	2
Lincoln	7	337	2	0	2	9
Logan	1	405	0	0	1	3
Love	0	0	0	0	0	1
Marshall	0	0	0	0	0	1
Murray	0	0	0	0	0	1
Muskogee	2	0	2	0	2	7
Noble	1	699	0	0	0	6
Okfuskee	6	233	2	1	1	6
Oklahoma	4	4,161	0	0	7	8
Okmulgee	14	222	7	0	6	28
Osage	5	40	3	1	2	14
Pawnee	4	7	2	1	1	3
Payne	1	1,768	0	0	2	2
Pittsburg	0	0	0	0	2	2
Pontotoc	7	978	1	1	8	28
Pottawatomie	17	2,429	7	1	6	30
Seminole	19	2,049	10	0	7	26
Stephens	2	49	0	0	1	7
Tillman	1	480	0	0	0	1
Tulsa	2	0	1	1	1	6
Wagoner	1	0	1	0	0	2
Washita	0	0	0	0	0	1
Ttl. July	133	15,216	61	7	61	294
Ttl. June	187	16,635	66	8	40	297
Difference	54	1,419	5	1	21	3

TEXAS GULF COAST

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Amelia	3	1,543	0	0	1	1
Anahuac	3	996	1	0	0	2
Bammel	1	144	0	0	0	0
Batson	1	362	0	0	1	1
Bay City	2	392	0	0	0	3
Barbers Hill	1	453	0	0	0	2
Big Hill	0	0	0	0	0	1
Boling	1	0	1	0	0	1
Cedar Point	0	0	0	0	0	1
Cheek	0	0	0	0	0	1
Clinton	1	114	0	0	0	3
Cotton Lake	1	148	0	0	0	2
Cleveland	1	42	0	0	0	0
Conroe	0	0	0	0	0	1
Cordelle	2	411	0	0	1	1
Danbury	2	277	0	0	0	1
Dickinson	13	6,278	0	0	2	8
Eureka	6	3,583	0	0	1	4
Fairbanks	19	9,801	0	0	3	14
Friendswood	10	5,961	2	0	1	4
Greens Lake	0	0	0	0	0	1
Hankamer	1	0	1	0	0	1
Hardin	12	5,406	1	0	2	11
Hastings	20	10,924	1	0	1	9
High Island	0	0	0	0	1	0
Hitchcock	2	629	0	0	0	1
Hull	0	0	0	0	0	2
Humble	3	226	1	0	1	1
Katy	0	0	0	0	0	1
Lockridge	1	173	0	0	0	2
Magnet	0	0	0	0	1	0
Manvel	1	537	0	0	0	2
Markham	2	0	2	0	0	0
Mauritz	1	0	1	0	0	0
McCrosky	0	0	0	0	0	1
N. Cheek	0	0	0	0	0	1
Old Ocean	2	675	0	0	0	3
Orchard	0	0	0	0	0	1
Orange	0	0	0	0	1	0
Palacios	1	0	1	0	0	0
Pickett Rge.	1	0	1	0	0	1
Pierce Jctn.	2	601	0	0	0	1
Seabreeze	1	0	1	0	0	1
Segno	1	289	0	0	0	3
Silsbee	3	1,112	0	0	1	1
S. Liberty	0	0	0	0	0	1
Spindletop	1	360	0	0	1	1
Spanish Camp	2	0	1	1	0	2
Spurger	1	255	0	0	0	1
Sugarland	2	0	2	0	0	0
Thompson	3	338	1	0	1	1
Tomball	6	2,073	1	2	0	3
Turtle Bay	1	132	0	0	1	0
Van Vleck	1	150	0	0	0	1
W. Columbia	4	2,111	0	0	3	3
Withers	4	676	0	0	0	3
Miscel.	11	0	11	0	5	13
Ttl. July	157	57,172	30	3	29	124
Ttl. June	127	42,191	29	1	23	120
Difference	30	14,981	1	2	6	4

WEST CENTRAL AND NORTH TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Archer	21	4,866	6	0	6	15
Baylor	1	0	1	0	0	1
Brown	9	273	5	0	2	13
Callahan	7	8	5	1	0	5
Clay	11	452	4	0	1	12
Coleman	0	0	3	1	1	7
Comanche	0	0	0	0	0	4
Cooke	9	303	2	1	1	10
Denton	0	0	0	0	0	4
Erath	0	0	0	0	0	1
Eastland	3	77	2	0	0	8
Fisher	3	1,218	0	0	0	6
Foard	1	0	1	0	0	1
Grayson	0	0	0	0	1	2
Haskell	1	0	1	0	0	3
Hardeman	0	0	0	0	0	1
Jack	34	2,432	14	1	9	28
Johnson	0	0	0	0	0	1
Jones	21	4,506	8	0	4	18
Knox	0	0	0	0	0	2
Montague	6	861	1	0	1	5
Palo Pinto	3	0	2	1	0	3
Parker	1	0	1	0	0	6
Shackelford	22	1,291	9	0	3	18
Stephens	1	51	0	0	0	2
Tarrant	1	0	1	0	0	0
Taylor	1	0	1	0	0	2
Throckmorton	2	0	2	0	1	6
Wichita	86	49,546	13	0	60	120
Wilbarger	4	685	1	0	2	5
Wise	0	0	0	0	0	4
Young	11	2,177	6	0	9	22
Ttl. July	263	68,746	89	5	101	335
Ttl. June	304	101,106	100	7	106	324
Difference	41	32,360	11	2	5	11

PANHANDLE DISTRICT

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Carson	8	984	0	4	2	10
Childress	0	0	0	0	0	2
Cottle	0	0	0	0	0	0
Collingsw'th	0	0	0	0	0	2
Deaf Smith	0	0	0	0	0	1
Donley	0	0	0	0	0	1
Dickens	0	0	0	0	0	3
Floyd	0	0	0	0	0	1
Gray	7	2,076	2	0	6	21
Hall	0	0	0	0	0	1
Hutchinson	11	5,477	0	1	10	49
Lipscomb	0	0	0	0	0	1
Moore	2	0	0	2	0	2
Parmer	0	0	0	0	0	0
Potter	0	0	0	0	0	1
Roberts	0	0	0	0	0	2
Sherman	0	0	0	0	0	0
Wheeler	1	0	0	1	0	4
Ttl. July	29	8,537	2	8	18	101
Ttl. June	60	21,250	2	9	29	94
Difference	31	12,713	0	1	11	7

WEST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Andrews	1	2,233	0	0	5	6
Bailey	1	0	1	0	0	0
Brewster	0	0	0	0	0	2
Cochran	2	352	0	0	0	2
Coke	1	0	1	0	0	1
Crane	3	5,068	0	0	3	14
Crockett	2	587	1	0	0	1
Culbertson	0	0	0	0	0	3
Concho	1	0	1	0	0	1
Dawson	0	0	0	0	0	1
Ector	47	62,844	0	0	20	80
Edwards	0	0	0	0	0	0
El Paso	0	0	0	0	0	1
Gaines	4	2,142	2	0	3	5
Garza	0	0	0	0	0	1
Glasscock	0	0	0	0	1	1
Hockley	0	0	0	0	0	6
Howard	11	5,189	1	0	9	27
Hudspeth	0	0	0	0	0	2
Irion	0	0	0	0	0	1
Jeff Davis	0	0	0	0	0	1
Kent	0	0	0	0	0	1
Kimble	0	0	0	0	1	1
Loving	1	0	1	0	0	3
Lynn	0	0	0	0	0	1
Menard	0	0	0	0	0	2
Martin	0	0	0	0	0	2
McCulloch	0	0	0	0	0	1
Pecos	7	1,670	2	0	11	30
Presidio	0	0	0	0	0	1
Reagan	0	0	0	0	0	1
Reeves	0	0	0	0	1	2
Runnels	0	0	0	0	0	3
Schleicher	0	0	0	0	0	2
Scurry	0	0	0	0	0	3
Sterling	2	0	2	0	0	1
Stonewall	2	0	2	0	0	4
Terrell	0	0	0	0	0	2
Tom Green	0	0	0	0	1	3
Upton	12	7,516	1	0	6	17
Val Verde	0	0	0	0	4	1
Ward	14	7,839	0	0	9	24
Winkler	18	17,807	0	0	5	10
Yoakum	13	12,306	0	0	6	24
Ttl. July	142	125,553	15	0	85	295
Ttl. June	201	167,220	27	2	106	312
Difference	59	41,667	12	2	21	17

SOUTHWEST TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Agua Dulce	1	0	0	1	1	1
Alfred	2	0	2	0	0	0
Alice (South)	9	1,062	2	0	3	7
Alta Mesa	1	0	1	0	1	0
Alta Verde	1	0	1	0	0	1
Alta Vista	0	0	0	0	0	1
Alworth	1	0	1	0	0	0
Barbacoas	3	55	1	0	1	0
Benavides	12	2,289	0	1	2	7
Branyon	5	353	0	0	0	4
Bruni	0	0	0	0	0	1
Buchanan	0	0	0	0	0	1
Calliham	1	15	0	0	0	1
Charco-Redondo	0	0	0	0	1	1
Casa Blanca	3	183	0	1	0	3
Chicon Lake	2	4	0	0	0	0
Chittim	0	0	0	0	0	1
Charmousca	2	65	1	0	1	0
Clara Driscoll	4	1,261	1	0	2	1
Comitas	2	60	0	0	1	0
Dale	1	0	1	0	0	1
Darst Creek	5	390	0	0	3	2
Driscoll	1	158	0	0	0	1
Dunlap	0	0	0	0	0	1
Dunlay	1	0	1	0	0	2
Eagle Hill	2	175	0	0	0	3
E. Placedo	2	146	0	0	1	1
E. Premont	1	204	0	0	1	0
E. Telferner	1	0	1	0	0	0
Escobas	5	78	1	0	0	2
E. White Pt.	2	265	0	0	1	3
Fitzsimmons	2	269	0	0	0	3
Flour Bluff	1	0	1	0	0	2
Heyser	10	1,797	0	0	2	5
Hilbig	0	0	0	0	0	1
Hoffman	16	1,046	2	1	2	3
Killam	2	40	0	1	0	2
Ina	4	18	3	0	1	1
Jenclens	1	8	0	0	0	2
Kingsville	0	0	0	0	0	1
Labbe	0	0	0	0	0	1
LaCoste	1	0	1	0	0	0
LaReforma	1	39	0	0	1	0
Loma Alta	2	0	2	0	0	1
Luby	17	2,812	0	0	3	6
Luling	3	145	0	0	2	3
Lundell	1	110	0	0	0	1
Margo	0	0	0	0	1	1
McCampbell	6	1,132	0	0	1	3
Mercedes	0	0	0	0	0	1
Midway	5	1,717	0	0	1	2
Mirando Valley	1	0	1	0	0	2
Mitchell Lake	2	0	2	0	0	1
Nash Creek	2	0	2	0	0	0
N. Agua Dulce	1	0	0	1	0	0
Oakville	2	31	1	0	0	1
O'Hern	1	0	0	1	1	0
Oilton	2	81	0	0	1	0
Piedra De Lumbre	1	80	0	0	1	0
Piedra Pintas	0	0	0	0	0	1
Plummer	2	62	1	0	0	1
Premont	2	10	0	1	1	0
Refugio	8	2,638	1	0	0	2
Richard King	1	125	0	0	0	1
Riddle	1	200	0	0	0	2
Rockdale	0	0	0	0	1	1
Salt Flats	4	170	1	0	0	3
Sam Fordyce	4	656	0	0	1	2
Saxet	6	554	1	0	2	13
Seven Sisters	5	298	2	0	0	3
S. Burnell	0	0	0	0	1	0
S. Calliham	1	25	0	0	1	0
S. Clara Driscoll	2	223	0	0	2	1
Somerset	0	0	0	0	0	2
Sweden	1	0	1	0	0	1
Telferner	0	0	0	0	0	1
Tesoro	1	0	1	0	0	1
Tom O'Connor	22	20,645	1	0	4	5
Von Ormy	4	11	1	0	0	1
Walnut Crk.	3	139	1	0	0	1
W. Saxet	5	1,301	0	0	1	2
Miscel.	54	0	54	0	7	52
Ttl. July	280	43,145	94	8	57	185
Ttl. June	205	18,467	62	6	50	203
Difference	75	24,678	32	2	7	18

COASTAL LOUISIANA

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Abbeville	0	0	0	0	0	2
Anse La-Butte	1	0	1	0	0	2
Bayou Blue	1	0	1	0	0	1
Bancroft	0	0	0	0	0	1
Bateman Lake	0	0	0	0	0	1
Bay St. Elaine	0	0	0	0	0	1
Bayou Cocotriz	1	543	0	0	0	2
Bayou Des Allemands	0	0	0	0	0	3
Big Lake	1	0	1	0	0	0
Black Bayou	0	0	0	0	0	1
Caillou Island	0	0	0	0	0	1
Cameron Meadows	1	80	0	0	1	2
Cerole	1	440	0	0	0	1
Charenton	3	410	1	0	0	2
Cheneyville	0	0	0	0	0	2
Choctaw	0	0	0	0	0	2
Darrow	2	681	1	0	0	2
Dog Lake	1	139	0	0	1	0
Dulac	1	124	0	0	0	0
E. Baton Rouge	1	0	1	0	0	2
Four Isle	0	0	0	0	0	1
Garden Island	1	962	0	0	0	1
Grand Prairie	1	401	0	0	1	0
Hackberry	6	1,175	1	0	0	6
Horseshoe Bayou	0	0	0	0	0	1
Jeanerette	0	0	0	0	0	1
Jefferson Island	0	0	0	0	0	1
Jennings	2	825	0	0	1	16
Lafitte	0	0	0	0	0	4
Lake Barre	0	0	0	0	0	2
Lake Hermitage	0	0	0	0	0	1
Lake Long	1	57	0	0	0	1
Lake Pelto	1	0	1	0	0	0
Leesville	1	385	0	0	0	2

Lirette	1	0	0	1	1	0
Lockport	1	139	0	0	1	2
N. Crowley	1	456	0	0	0	1
New Iberia	5	2,282	1	0	2	7
Port Barre	3	410	0	0	0	2
Potash	0	0	0	0	0	1
Quarantine Bay	0	0	0	0	0	2
Raceland	0	0	0	0	0	3
S. Roanoke	0	0	0	0	0	2
Sorrento	1	0	0	1	1	1
Starks	0	0	0	0	0	2
Sulphur	1	543	0	0	0	4
Timbalier Bay	0	0	0	0	0	1
Valentine	1	1,296	0	0	0	3
Venice	0	0	0	0	0	1
Villa Platte	5	2,086	1	0	0	5
Welsh	1	0	1	0	0	2
W. Gueydan	1	400	0	0	2	0
Woodlawn	0	0	0	0	0	1
Miscel.	8	0	8	0	5	18
Ttl. July	56	13,834	19	2	16	123
Ttl. June	40	13,162	9	0	17	111
Difference	16	672	10	2	1	12

ARKANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Calhoun	0	0	0	0	1	0
Cleveland	0	0	0	0	1	0
Columbia	0	0	0	0	1	6
Craighead	0	0	0	0	0	1
Crittendon	0	0	0	0	1	0
Lafayette	0	0	0	0	0	1
Lincoln	0	0	0	0	0	1
Little River	0	0	0	0	1	1
Lonoke	0	0	0	0	1	0
Miller-Rodessa	2	1,850	0	0	1	4
Nevada	1	200	0	0	1	1
Pike	0	0	0	0	1	0
Pulaski	0	0	0	0	1	1
Union	11	7,940	0	0	2	18
Ttl. July	14	9,990	0	0	12	34
Ttl. June	16	7,850	2	0	15	29
Difference	2	2,140	2	0	3	5

NORTH LOUISIANA

Summary of Field Operations

Parish—	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.
Bienville	1	0	1	0	0	1
Bossier	4	765	0	0	3	3
Caddo-Other	13	810	5	1	4	12
Caldwell	0	0	0	0	0	2
Catahoula	0	0	0	0	1	0
Claiborne	13	8,750	2	0	2	13
Concordia	0	0	0	0	1	0
De Soto	4	0	4	0	2	3
Grant	0	0	0	0	2	0
LaSalle	2	60	0	0	0	1
Lincoln	1	655	0	0	0	3
Madison	0	0	0	0	0	1
Morehouse	1	0	0	1	0	4
Natchitoches	0	0	0	0	2	0
Ouachita	1	0	0	1	1	0
Red River	1	5	0	0	0	2
Sabine	5	160	2	0	3	12
Union	5	0	1	4	3	3
Webster	12	5,855	0	5	5	15
Ttl. July	63	17,060	15	12	29	75
Ttl. June	68	22,220	15	4	30	65
Difference	5	5,240	0	8	1	10

*Gas production: Caddo, 100,000 feet; Morehouse, 5,112,000 feet; Ouachita, 1,500,000 feet; Union, 16,274,000 feet; Webster, 16,000,000 feet.

EAST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Anderson	7	730	1	0	3	4
Angelina	1	0	1	0	0	1
Bowie	1	0	1	0	0	0
Cherokee	1	0	1	0	0	1
Dallas	0	0	0	0	0	2
Falls	0	0	0	0	0	1
Franklin	3	953	0	0	1	2
Freestone	3	646	0	0	0	3
Grayson	0	0	0	0	1	2
Gregg	55	2,887	0	0	15	16
Henderson	3	303	1	0	3	4
Houston	1	0	0	1	1	3
Kaufman	0	0	0	0	1	1
Lamar	1	0	1	0	0	0
Leon	0	0	0	0	0	2
Limestone	0	0	0	0	0	2
McLennan	0	0	0	0	0	3
Madison	0	0	0	0	0	1
Nacogdoches	0	0	0	0	0	1
Navarro	3	0	3	0	0	2
Red River	0	0	0	0	0	3
Rockwall	0	0	0	0	0	1
Rusk	53	2,528	2	0	11	24
Smith	5	212	1	0	0	4
Titus	2	476	0	0	0	1
Trinity	0	0	0	0	1	0
Upshur	9	282	1	0	5	10
Van Zandt	0	0	0	0	0	1
Ttl. July	148	9,017	13	1	42	95
Ttl. June	189	11,794	19	2	34	115
Difference	41	2,777	6	1	8	20

EAST TEXAS—BORDER

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bowie	0	0	0	0	1	0
Cass-Rodessa	1	375	0	0	0	3
Marion-Rodessa	11	3,615	0	0	5	7
Marion-Other	0	0	0	0	2	1
Panola	0	0	0	0	0	1
Sabine	0	0	0	0	1	2
Shelby	0	0	0	0	2	1
Ttl. July	12	3,990	0	0	11	15
Ttl. June	12	4,225	0	0	5	17
Difference	0	235	0	0	6	2

MISSISSIPPI

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Calhoun	0	0	0	0	1	0
George	0	0	0	0	1	0
Harrison	0	0	0	0	1	0
Hinds	0	0	0	0	1	1
Lamar	0	0	0	0	1	0
Rankin	1	0	0	1	0	0
Simpson	0	0	0	0	1	1
Yalobusha	0	0	0	0	0	1
Ttl. July	1	0	0	1	6	3
Ttl. June	1	0	0	1	7	3
Difference	0	0	0	0	1	0

FLORIDA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Lake	0	0	0	0	1	0
Nassau	0	0	0	0	0	1
Ttl. July	0	0	0	0	1	1
Ttl. June	0	0	0	0	1	1
Difference	0	0	0	0	0	0

Note: There were no tests rigged up nor drilling in Alabama during July.

ROCKY MOUNTAIN AREA

Colorado

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	0	1
Archuleta	0	0	0	0	0	4
Huerfano	0	0	0	0	0	2
La Plata	0	0	0	0	0	2
Las Animas	0	0	0	0	0	2
Mesa	0	0	0	0	0	2
Moffat	1	250	0	0	0	2
Park	1	0	1	0	0	1
Prowers	0	0	0	0	0	1
Pueblo	0	0	0	0	2	1
Rio Blanco	0	0	0	0	0	1
Routt	0	0	0	0	0	2
Misc.	0	0	0	0	1	9
Ttl. July	2	250	1	0	3	30
Ttl. June	1	0	0	1	1	32
Difference	1	250	1	1	2	2

Wyoming

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Albany	1	40	0	0	0	0
Big Horn	0	0	0	0	0	4
Carbon	3	0	2	1	1	3
Converse	2	0	2	0	0	7
Fremont	1	0	0	1	0	5
Hot Springs	0	0	0	0	0	5
Lincoln	0	0	0	0	0	2
Natrona	1	140	0	0	2	1
Niobrara	4	4,178	2	0	1	4
Park	1	250	0	0	0	5
Sublette	1	15	0	0	1	3
Sweetwater	1	30	0	0	0	2
Uinta	0	0	0	0	0	2
Washakie	1	0	0	1	0	0
Weston	6	79	3	0	3	7
Misc.	0	0	0	0	0	2
Ttl. July	22	4,732	9	3	8	52
Ttl. June	9	1,992	2	1	2	66
Difference	13	2,740	7	2	6	14

Montana

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Big Horn	0	0	0	0	0	2
Carbon	0	0	0	0	0	6
Fallon	1	0	0	1	0	2
Fergus	0	0	0	0	0	5
Glacier	7	571	0	1	2	7
Hill	0	0	0	0	0	2
Petroleum	0	0	0	0	0	4
Pondera	0	0	0	0	0	2
Teton	0	0	0	0	1	1
Toole	3	145	0	0	0	17
Yellowstone	0	0	0	0	0	3
Misc.	0	0	0	0	0	10
Ttl. July	11	716	0	2	3	61
Ttl. June	8	213	2	0	3	53
Difference	3	503	2	2	0	8

Utah

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ttl. July	0	0	0	0	1	5
Ttl. June	2	0	1	1	1	5
Difference	2	0	1	1	0	0

Nebraska

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ttl. July	0	0	0	0	0	7
Ttl. June	0	0	0	0	1	6
Difference	0	0	0	0	1	1

New Mexico

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bernalillo	0	0	0	0	0	1
McKinley	0	0	0	0	1	4
Rio Arriba	0	0	0	0	0	2
San Juan	3	56	0	1	0	3
San Miguel	0	0	0	0	0	3
Socorro	0	0	0	0	0	1
Torrance	0	0	0	0	0	1
Valencia	0	0	0	0	0	3
Lea	30	9,445	0	0	17	82
Eddy	4	692	1	0	0	18
Chaves	1	0	1	0	0	5
Colfax	0	0	0	0	0	1
De Baca	0	0	0	0	0	1
Otero	0	0	0	0	0	2
Ttl. July	38	10,193	2	1	18	127
Ttl. June	41	13,157	1	0	14	150
Difference	3	2,964	1	1	4	23

WESTERN KENTUCKY

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Breckinridge	0	0	0	0	0	5
Butler	2	10	1	0	0	7
Daviess	11	1,178	4	1	1	20
Grayson	1	0	1	0	0	2
Hancock	3	10	1	0	0	2
Henderson	17	6,330	2	1	1	10
Hopkins	0	0	0	0	0	1
McLean	4	95	1	0	0	5
Muhlenberg	0	0	0	0	0	2
Ohio	16	90	7	1	0	16
Todd	0	0	0	0	0	1
Webster	1	0	0	1	0	1
Ttl. July	55	7,713	17	4	2	72
Ttl. June	65	3,918	27	5	1	66
Difference	10	3,795	10	1	1	6

EASTERN KENTUCKY

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Martin	10	128	0	5	2	6
Floyd	8	38	0	4	0	5
Knott	2	0	0	2	1	4
Pike	0	0	0	0	0	4
Lee	4	96	0	0	1	3
Johnson	2	0	1	1	1	1
Wolfe	0	0	0	0	0	2
Lawrence	0	0	0	0	0	2
Magoffin	1	3	0	0	0	2
Powell	3	5	0	0	0	3
Scott	1	0	0	1	0	0
Ttl. July	31	270	1	13	5	32
Ttl. June	19	203	5	7	1	37
Difference	12	67	4	6	4	5

ILLINOIS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bond	0	0	0	0	0	4
Cass	0	0	0	0	0	1
Clay	13	6,152	1	0	0	9
Crawford	1	0	1	0	0	1
Coles	0	0	0	0	0	1
Clark	0	0	0	0	0	2
Clinton	53	6,595	3	0	2	37
Cumberland	0	0	0	0	0	1
Edgar	1	0	1	0	0	2
Effingham	1	0	1	0	0	0
Jasper	0	0	0	0	0	1
Jefferson	3	259	1	0	1	6
Lawrence	0	0	0	0	0	3
Macon	0	0	0	0	0	1
Marion	33	5,622	5	0	5	52
Macoupin	0	0	0	0	0	1
Menard	0	0	0	0	0	1
McDonough	0	0	0	0	0	1
Montgomery	0	0	0	0	0	1
Piatt	0	0	0	0	0	1
Pope	0	0	0	0	0	1
Randolph	0	0	0	0	0	1
Richland	8	4,465	1	0	3	9
Saline	1	0	1	0	1	1
St. Clair	0	0	0	0	0	2
Shelby	0	0	0	0	0	3
Williamson	0	0	0	0	0	1
Washington	2	0	2	0	1	4
Wayne	6	788	3	0	2	4
White	1	0	1	0	0	1
Wabash	1	0	1	0	1	2
Morgan	0	0	0	0	0	1
Sangamon	0	0	0	0	0	1
Fayette	19	2,290	5	0	6	30
Madison	0	0	0	0	0	1
Litchfield	0	0	0	0	0	1
DeWitt	0	0	0	0	0	1
Champaign	0	0	0	0	0	1
Edwards	0	0	0	0	0	1
Franklin	0	0	0	0	1	1
Gallatin	0	0	0	0	0	1
Johnson	0	0	0	0	0	1
Ttl. July	143	26,171	27	0	23	195
Ttl. June	169	33,641	40	1	17	174
Difference	26	7,470	13	1	6	21

INDIANA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Blackford	0	0	0	0	0	1
Clay	0	0	0	0	0	1
Crawford	0	0	0	0	0	2
Daviess	0	0	0	0	0	1
Decatur	1	0	0	1	0	1
DeKalb	0	0	0	0	0	1
Harrison	3	0	3	0	0	1
Huntington	0	0	0	0	0	1
Jasper	1	0	1	0	0	1
Knox	0	0	0	0	0	4
LaGrange	0	0	0	0	0	1
Madison	0	0	0	0	0	1
Martin	0	0	0	0	1	0
Perry	1	0	1	0	0	3
Pike	0	0	0	0	0	3
Porter	0	0	0	0	0	1
Posey	0	0	0	0	0	6
Shelby	0	0	0	0	0	2
Spencer	0	0	0	0	0	1
Sullivan	2	0	1	1	1	3
Vigo	1	50	0	0	0	5
Warrick	0	0	0	0	1	0
Ttl. July	9	50	6	2	3	40
Ttl. June	18	148	7	2	0	34
Difference	9	98	1	0	3	6

MICHIGAN

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	1	50	0	0	1	1
Bentley	5	412	0	0	0	4
Buckeye	12	1,851	4	0	2	9
Winegars	4	357	0	0	1	1
Clayton	1	135	0	0	0	2
Crystal	0	0	0	0	0	1
Currie	5	400	3	0	0	0
Dorr	8	640	4	0	0	8
Edenville	3	382	1	0	1	6
Fremont	1	200	0	0	0	5
Edmore	0	0	0	0	0	1
Monterey	8	775	2	0	1	4
New Haven	1	0	0	1	1	0
Overisel	1	836	0	0	2	10
Newark	0	0	0	0	0	1
Saginaw	0	0	0	0	0	2
Salem	4	667	0	0	0	0
Secord	0	0	0	0	0	0
Sherman	4	1,097	0	0	0	2
Trowbridge	0	0	0	0	2	1
West Branch	0	0	0	0	1	6
Winfield	0	0	0	0	0	1
Wisener	0	0	0	0	0	1
Wise	1	0	1	0	0	1
Wildcats	28	25	26	0	8	61
Ttl. July	87	7,827	41	1	20	128
Ttl. June	90	12,075	35	2	24	119
Difference	3	4,248	6	1	4	9

EASTERN FIELDS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Allegany	35	25	0	0	4	21
Bradford	116	158	0	0	6	46
Middle fields	17	38	2	1	2	11
Butler-Armstrong	8	14	1	1	2	8
N.Y.-Pa. gas field	4	0	3	1	3	18
S.W. Penna.	12	12	3	6	7	28
S.E. Ohio	28	292	6	6	8	38
West Virginia	45	41	13	27	25	128
Total July	265	580	28	42	57	298
Total June	286	573	26	36	49	286
Difference	21	7	2	6	8	12

Completions in Bradford include 24 water-intake wells and in Allegany 7.

OHIO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ashland	2	0	1	1	1	2
Athens	8	16	2	5	1	6
Belmont	1	0	0	1	1	1
Coshocton	1	38	0	0	2	1
Cuyahoga	1	0	0	1	1	2
Fairfield	2	0	1	1	2	1
Gallia	1	0	1	0	0	2
Guernsey	2	0	0	2	1	5
Harrison	1	0	1	0	0	1
Hocking	0	0	0	0	2	1
Holmes	0	0	0	0	0	2
Huron	1	0	0	1	0	2
Knox	7	155	1	2	4	6
Lawrence	3	0	0	3	0	2
Licking	8	82	3	2	5	12
Lorain	2	0	2	0	2	3
Medina	4	125	2	0	4	3
Meigs	3	0	1	2	2	5
Monroe	2	0	2	0	0	4
Morgan	1	0	0	1	1	2
Muskingum	2	2	1	0	1	1
Noble	2	0	1	1	1	5
Perry	3	15	2	0	1	4
Richland	0	0	0	0	1	2
Scioto	0	0	0	0	0	1
Stark	1	0	1	0	0	5
Summit	0	0	0	0	0	2
Trumbull	0	0	0	0	0	1
Tuscarwas	1	0	1	0	1	4
Vinton	1	0	0	1	1	0
Washington	10	11	3	4	2	14
Wayne	0	0	0	0	0	1
Ttl. July	70	444	26	28	37	103
Ttl. June	84	630	27	35	38	91
Difference	14	186	1	7	1	12

LIMA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Putnam	1	0	1	0	0	2
Sandusky	0	0	0	0	0	1
Seneca	0	0	0	0	0	7
Wood	0	0	0	0	0	1
Ttl. July	1	0	1	0	0	11
Ttl. June	2	84	0	0	1	4
Difference	1	84	1	0	1	7

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Wilshire Oil, No. 1 Hollister, Gaviota, Santa Barbara	35- 5-33	4,650	P. B. 3,450
Shell Oil, No. 1-27 Covarrubias, Capitan, S. Barbara	32- 5-30	1,320	flow 631 b.o
Shell Oil, No. 1-28 Covarrubias, Capitan, S. Barbara	32- 5-30	876	sd. sh. drlg.
Barnsdall Oil, No. 19 Bell, Elwood, Santa Barbara	15- 4-29	5,371	sd. sh. drlg.
Hancock-Bush, No. 3 Cal. Lands, S. Maria, S. Barbara	30-10-33	4,435	rig to pump
Union Oil, No. 4 Vicente, Santa Maria, Santa Barbara	21-10-34	2,196	sd. sh. drlg.
Union Oil, No. 2 Wheat, Santa Maria, Santa Barbara	22-10-34	3,945	cleaning out
Union Oil, No. 2 Mallory, Santa Maria, Santa Barbara	27-10-34	5,135	flow 1,150 b.d.
Standard Oil, No. 1, Cat Canyon, Santa Barbara	27- 9-33	6,440	pump 375 b.d.
Douglas Oil, No. 1 Stratton, Los Alamos, S. Barbara	8- 8-33	6,000	pump water
Barnsdall Oil, No. 5 Magenheimer, Gato Ridge, S. B.	9- 8-32	2,633	hd. sh. drlg.
Petrol Corp., No. 511 Magenheimer, Rato Ridge, S. B.	9- 8-32	3,205	br. sh. drlg.
Oceanic Oil, No. 1 Santa Barbara Mesa, S. Barbara	28- 4-27	2,780	sd. sh. drlg.
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,691	fishing
Holly Dev., No. 1 Macrate, Ojai, Ventura	27- 4-23	4,640	br. sh. drlg.
Ventura Drlg., No. 1, Ojai, Ventura	10- 3-23	170	sd. sh. drlg.
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	6,150	sd. sh. drlg.
Merchants Pet., No. 1, Sespe, Ventura	1- 4-20	865	hd. sh. drlg.
St. Louis Oil, No. 1 Williamson, Sespe, Ventura	1- 4-20	570	sd. sh. drlg.
Stalling & Senter, No. 1, Timber Canyon, Ventura	24- 4-21	1,440	P. B. 1,245
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	2,050	O. S. drlg.
McKinnis, C. R., No. 1, Hopper Canyon, Ventura	14- 4-19	620	sd. sh. drlg.
Texas Co., No. 135 Shiells, Shiells Canyon, Ventura	4- 3-19	268	sd. sh. drlg.
Continental Oil, No. 9 Grubb, San Miguelito, Ventura	24- 3-24	4,996	sd. sh. drlg.
Ridge Oil, No. 1 Fox, Padre Canyon, Ventura	9- 3-24	316	sd. sh. drlg.
C. C. M. Oil, No. 7 Oakgrove, Padre Canyon, Ventura	23- 3-24	3,594	gr. sd. drlg.
C. C. M. Oil, No. 7-C Hobson, Rincon, Ventura	17- 3-24	3,602	P. B. 3,561
Richfield Oil, No. 5-F State, Rincon, Ventura	17- 3-24	980	sd. sh. drlg.
Tide Water A., No. 39 V.L.W., Ventura Ave., Ventura	24- 3-23	7,020	sd. sh. drlg.
Tide Water A., No. 75 Lloyd, Ventura Ave., Ventura	26- 3-23	6,823	sd. sh. drlg.
Tide Water A., No. 111 Lloyd, Ventura Ave., Ventura	27- 3-23	9,803	salt water
Tide Water A., No. 127 Lloyd, Ventura Ave., Ventura	27- 3-23	8,471	sd. sh. drlg.
Tide Water A., No. 134 Lloyd, Ventura Ave., Ventura	27- 3-23	8,378	cleaning out
Tide Water A., No. 7 Hartman, Ventura Ave., Ventura	22- 3-23	6,873	sd. sh. drlg.
Tide Water A., No. 11 McGonigle, Ventura Ave., Ven.	23- 3-23	8,950	hd. sd. drlg.
Shell Oil, No. 96 Taylor, Ventura Ave., Ventura	28- 3-23	7,390	cleaning out
Shell Oil, No. 30 Edison, Ventura Ave., Ventura	20- 3-23	4,461	sd. sh. drlg.
Shell Oil, No. 31 Edison, Ventura Ave., Ventura	20- 3-23	7,798	mill tubing
Shell Oil, No. 37 Gosnell, Ventura Ave., Ventura	28- 3-23	8,618	P. B. 8,470
General Pet., No. 18 Barnard, Ventura Ave., Ventura	21- 3-23	7,772	recmtd. 7,750
Lloyd Corp., No. 2 Dabney-Lloyd, Ventura Ave., Ven.	23- 3-23	3,495	sd. sh. drlg.
Gibson Oil, No. 3 Alferitz, Devils Den, Kern	14-25-18	890	hd. sd. drlg.
Lyse & Sonne, No. 1 Pasadena, McKittrick, Kern	28-30-22	4,032	P. B. 3,422
Belridge Oil, No. 27-13, North Belridge, Kern	27-27-20	4,862	sd. sh. drlg.
Tide Water A., No. 22-3, North Belridge, Kern	22-27-20	4,185	sd. sh. drlg.
Richfield Oil, No. 2 Belridge, North Belridge, Kern	22-27-20	8,240	hd. sd. drlg.
Texas Co., No. 4 Martin, North Belridge, Kern	22-27-20	8,273	cmtd. 8,266
B & S Drlg., No. 1 Newberry, Round Mountain, Kern	32-28-29	512	sd. sh. drlg.
Honolulu Oil, No. 49, Round Mountain, Kern	20-28-29	1,596	sd. sh. drlg.
Kern Oil, No. 25-3-C, Kern Front, Kern	25-28-27	1,987	P. B. 1,965
Helm & Smith, No. 6-A Kernco, Kern River, Kern	34-28-28	480	sd. sh. drlg.
Cal. Star Oil, No. 5-80, Kern River, Kern	22-28-27	2,335	gr. sd. drlg.
Barnhart & Morrow, No. 5 KCL, Kern River, Kern	11-28-27	1,733	rig to pump
Hast Oil, No. 4 Kern, Kern River, Kern	34-28-28	346	P. B. 335
Federal Drlg., No. 3 Glide, Mount Poso, Kern	13-26-28	1,770	sd. sh. drlg.
Marean Oil, No. 5 Glide, Mount Poso, Kern	1-27-27	2,821	dry; abd.
Ring Oil, No. 7 Bowles, Mount Poso, Kern	29-26-28	1,740	rig to pump
Ring Oil, No. 3 Rogers-Jones, Mount Poso, Kern	29-26-28	1,697	O. S. drlg.
Richfield Oil, No. 1, Union Avenue, Kern	6-30-28	3,594	sd. sh. drlg.
Texas Co., No. 1 Lowe, Fruitvale, Kern	7-29-27	8,516	hd. sh. drlg.
Pacific O. & G., No. 3 Guisti, Fruitvale, Kern	14-29-27	2,964	O. S. drlg.
Hogan Pet., No. 3 Peters, Mountain View, Kern	5-31-29	5,460	bailing
Greer, P. H., No. 2 Perrel, Mountain View, Kern	9-31-29	6,638	redrlg. 6,310
Continental Oil, No. 3-A, KCL, Wasco, Kern	8-27-24	11,587	sd. sh. drlg.
Continental Oil, No. 1 Seaboard, KCL, Wasco, Kern	26-27-24	12,778	fish core bbl.
Standard Oil, No. 8-1-B, KCL, Wasco, Kern	17-24-24	11,710	sd. sh. drlg.
Standard Oil, No. 1 Mushrush, Wasco, Kern	7-27-24	10,298	sd. sh. drlg.
Superior Oil, No. 3 Geissinger, Bravo, Kern	35-28-25	11,500	flow 3,737 b.d.
Superior Oil, No. 1 Helbling, Rio Bravo, Kern	1-29-25	13,430	sd. sh. drlg.
Union Oil, No. 2-34, KCL, Rio Bravo, Kern	34-28-25	11,204	redrlg. 9,210
Union Oil, No. 4-34, KCL, Rio Bravo, Kern	34-28-25	11,315	sd. sh. drlg.
Union Oil, No. 5-34, KCL, Rio Bravo, Kern	34-28-25	7,152	sd. sh. drlg.
Getty Oil, No. 2 Ramsey, Rio Bravo, Kern	35-28-25	11,539	flow 6,250 b.d.
General Pet., No. 1 Wagoner, Rio Bravo, Kern	35-28-25	11,420	sd. sh. drlg.
General Pet., No. 4 Wagoner, Rio Bravo, Kern	35-28-25	9,690	sd. sh. drlg.
Standard Oil, No. 18-1, KCL, Una, Kern	29-28-26	10,499	will abdn.
Tide Water A., Well No. 1, Pond, Kern	17-26-25	9,190	dry; abd.
Standard Oil, No. 11-15, KCL, Greeley, Kern	18-29-26	7,735	flow 700 b.d.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	9,948	sd. sh. drlg.
Superior Oil, No. 1 Krause, Greeley, Kern	21-29-26	8,178	cleaning out
Continental Oil, No. 2-B, KCL, Rosedale, Kern	12-29-26	7,871	sd. sh. drlg.
Continental Oil, No. 1-E, KCL, Stevens, Kern	17-30-26	8,574	P. B. 8,230
Standard Oil, No. 15-2, KCL, Canfield Ranch, Kern	27-30-26	8,525	fish D. P.
Shell Oil, No. 67-30-A, KCL, Ten Section, Kern	30-30-26	4,752	sd. sh. drlg.
Shell Oil, No. 2-32-B, KCL, Ten Section, Kern	32-30-26	8,200	O. S. drlg.
Shell Oil, No. 72-31-B, KCL, Ten Section, Kern	31-30-26	7,765	sd. sh. drlg.
Shell Oil, No. 67-20-B, KCL, Ten Section, Kern	20-30-26	7,796	sd. sh. drlg.
Shell Oil, No. 45-14-A, KCL, Canal, Kern	14-30-25	5,924	sd. sh. drlg.
Ohio Oil, No. 8-E, KCL, Canal, Kern	14-30-25	4,090	sd. sh. drlg.
Richfield Oil, No. 1 KCL, Tupman, Kern	32-30-25	5,287	sd. sh. drlg.
Ohio Oil, No. 1-F, KCL, Coles Levee, Kern	10-31-25	2,083	sd. sh. drlg.
Ohio Oil, No. 8-A, KCL, Buena Vista Lake, Kern	32-31-26	11,186	testing
Signal Oil, No. 5 Kendon, Midway-Sunset, Kern	35-32-23	2,180	br. sh. drlg.
Cates, M. B., No. 8 Special, Midway-Sunset, Kern	2-11-24	634	bailing
Mascot Oil, No. 3 Midway, Midway-Sunset, Kern	36-32-23	2,828	P. B. 1,650
Magnuson, C. A., No. 1 Midway, Midway-Sunset, Kern	19-31-23	2,251	sd. sh. drlg.
Big Ten Oil, No. 12 Midway, Midway-Sunset, Kern	36-32-23	951	O. S. drlg.
Shell Oil, No. 4-26, KCL, San Emidio, Kern	26-11-22	10,272	sd. sh. drlg.
Richfield Oil, No. 1, KCL, Wheeler Ridge, Kern	28-11-20	5,904	sd. sh. drlg.
Pure Oil, No. 1 SPL, Huron, Fresno	31-18-17	11,705	hd. sh. drlg.
Magnet Oil, No. 2 Fearon, Fresno	18-19-15	3,550	redrlg. 3,216
Jacalitos Oil, No. 1, Jacalitos Hills, Fresno	14-21-15	6,871	sd. sh. drlg.
Pet. Sec., No. 7-7-F, Guijarral Hills, Fresno	18-20-16	5,618	sd. sh. drlg.
Pet. Sec., No. 88 Grimes, Guijarral Hills, Fresno	12-20-15	6,610	sd. sh. drlg.
Goetz, F., Co., No. 1, Guijarral Hills, Fresno	10-25-15	5,851	sd. sh. drlg.
Standard Oil, No. 82-13 fee, Guijarral Hills, Fresno	13-20-15	4,477	sd. sh. drlg.
Texas Co., No. 19 Mohawk, Guijarral Hills, Fresno	12-20-15	4,597	sd. sh. drlg.
Universal Consd. Oil, No. 1, Guijarral Hills, Fresno	12-20-15	6,291	sd. sh. drlg.
Tide Water, No. 66 Guardian, Guijarral Hills, Fresno	12-20-15	4,296	sd. sh. drlg.
Superior Oil, No. 1 Hight, Guijarral Hills, Fresno	8-20-15	7,250	sd. sh. drlg.
Cent. Valley Oil, No. 1, Burkhead, Fresno	1-12-20	622	idle
Dauphin Dev., No. 2 Boone, Alcalde, Fresno	30-21-14	593	sd. sh. drlg.
K.N.D.A., No. 85-34-J, Kettleman North, Kings	34-21-17	8,486	gr. sd. drlg.
K.N.D.A., No. 38-6-Q Kettleman North, Kings	6-22-18	6,390	br. sh. drlg.
K.N.D.A., No. 27-8-Q, Kettleman North, Kings	6-22-18	6,781	br. sh. drlg.
K.N.D.A., No. 58-8-Q, Kettleman North, Kings	8-22-18	6,812	br. sh. drlg.
K.N.D.A., No. 27-16-Q, Kettleman North, Kings	16-22-18	8,442	sd. sh. drlg.
K.N.D.A., No. 38-16-Q, Kettleman North, Kings	16-22-18	5,589	br. sh. drlg.
K.N.D.A., No. 43-20-K, Kettleman North, Kings	20-22-18	8,860	gr. sd. drlg.
K.N.D.A., No. 27-22-Q, Kettleman North, Kings	22-22-18	8,070	fish D. P.
Standard Oil, No. 46-13-H, Kettleman North, Fresno	13-21-16	10,836	flow gas
Standard Oil, No. 21-13-P, Kettleman North, Kings	13-22-17	7,480	sd. sh. drlg.
Standard Oil, No. 74-7-Q, Kettleman North, Kings	7-22-18	8,895	completing
Standard Oil, No. 41-17-Q, Kettleman North, Kings	17-22-18	4,590	sd. sh. drlg.
Standard Oil, No. 61-21-Q, Kettleman North, Kings	21-22-18	6,550	sd. sh. drlg.
Irving, A. R., No. 1 Bisconer, Dudley Ridge, Kings	11-24-20	1,691	sd. sh. drlg.
Tri-Counties Oil, No. 1, Alpaugh, Kings	10-23-22	7,798	sd. sh. drlg.
Crusaders Oil, Well No. 1, Ducor, Tulare	1-24-27	890	sd. sh. drlg.
Texas Co., No. 1 Lewis, King City, Monterey	13-19-5	1,872	cleaning out
Cal. Pet. Prod., No. 1 Jobe, Elkhorn, San Luis Obispo	6-10-24	2,163	hd. sd. drlg.
Cal. Pet. Prod., No. 1 Irons, Elkhorn, San Luis Obispo	19-10-24	2,097	hd. sd. drlg.
Vanguard Oil, No. 1 Creston, San Luis Obispo	26-27-14	4,673	sd. sh. drlg.
Hancock Oil, No. Dick, Huasna, San Luis Obispo	30-12-33	5,598	sd. sh. drlg.
Ohio Oil, No. 1-A Willard, Willows, Glenn	18-20-2	6,014	P. B. 5,540
Amerada Pet., No. 1 California Lands, Colusa, Colusa	34-16-1	6,042	sd. sh. drlg.
Richfield Oil, No. 1, Potrero Hills, Solano	10- 4-1	3,590	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shut off O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Sovereign Oil, No. 2 Community, El Segundo, L. A.	12- 3-15	7,235	sd. sh. drlg.
Sovereign Oil, No. 1 Coppinger, El Segundo, L. A.	12- 3-15	6,580	sd. sh. drlg.
Rolling Hills Oil, No. 1 Weston, Palos Verdes, L. A.	27- 4-14	5,103	sd. sh. drlg.
Gypsy Oil, No. 16 Getty, Torrance, Los Angeles	14- 4-14	5,008	pump 50 b.d.
Allison & Oglesby, No. 2 Garner, Torrance, L. Angeles	14- 4-14	4,452	sd. sh. drlg.
Bergseid & Clark, No. 1 Basin, Torrance, L. Angeles	23- 4-14	3,783	will deepen
Blue Bell Pet., No. 1 Simons, Torrance, Los Angeles	23- 4-14	3,487	sd. sh. drlg.
Caldale Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,791	sd. sh. drlg.
Collier, P. V., No. 1 Smith, Torrance, Los Angeles	23- 4-14	3,605	will deepen
Consolidated Pet., No. 3, Torrance, Los Angeles	23- 4-14	2,998	sd. sh. drlg.
Cal. Star Oil, No. 1 Whitacre, Torrance, Los Angeles	23- 4-14	3,997	sd. sh. drlg.
Coast Line Oil, No. 2 Barto, Torrance, Los Angeles	23- 4-14	4,990	pump 25 b.d.
Cal-Oak Oil, No. 1 Devils, Torrance, Los Angeles	23- 4-14	4,977	flow 185 b.d.
Cairidge Oil, No. 1 Meyer, Torrance, Los Angeles	23- 4-14	4,994	flow 90 b. d.
Douglas, S., No. 1 Scotty, Torrance, Los Angeles	23- 4-14	1,151	sd. sh. drlg.
Dunphy, S. R., No. 1 Lomita, Torrance, Los Angeles	23- 4-14	5,002	sd. sh. drlg.
Elexico Oil, No. 3 Allen, Torrance, Los Angeles	23- 4-14	3,691	sd. sh. drlg.
Eriksson, G., No. 3 Fortuna, Torrance, Los Angeles	23- 4-14	4,584	sd. sh. drlg.
Falma Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,865	sd. sh. drlg.
Fiat Oil, No. 1 Seeple, Torrance, Los Angeles	23- 4-14	4,471	sd. sh. drlg.
Freeman Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,586	sd. sh. drlg.
Hansco Oil, No. 2 Lomita, Torrance, Los Angeles	14- 4-14	4,830	cleaning out
H. D. Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	3,807	rigging up
Jewel Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,907	sd. sh. drlg.
Kenber Oil, No. 1 Berken, Torrance, Los Angeles	23- 4-14	3,795	redrlg. 3,590
Kirk, W. A., No. 12 Lomita, Torrance, Los Angeles	23- 4-14	4,970	flow 251 b.d.
Kovell Oil, No. 2 Lomita, Torrance, Los Angeles	23- 4-14	3,783	sd. sh. drlg.
Lomita Drlg., No. 1 Hogan, Torrance, Los Angeles	22- 4-14	4,985	flow 252 b.d.
Mildon Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	2,097	sd. sh. drlg.
Maldum Oil, No. 1 R. K., Torrance, Los Angeles	23- 4-14	4,652	sd. sh. drlg.
Morton & Elder, No. 1 Ritzer, Torrance, Los Angeles	22- 4-14	4,974	sd. sh. drlg.
Medill, John, No. 4 Frenger, Torrance, Los Angeles	23- 4-14	3,595	rigging up
McDonald & Burns, No. 2 Moore, Torrance, L. Angeles	23- 4-14	4,975	pump 65 b.d.
McDonald & Burns, No. 9 Moore, Torrance, L. Angeles	23- 4-14	4,970	pump 120 b.d.
McDonald & Burns, No. 10 Moore, Torrance, L. Ang.	22- 4-14	4,770	sd. sh. drlg.
McCaslin, W. E., No. 2, Torrance, Los Angeles	14- 4-14	4,993	sd. sh. drlg.
McWherter, C. L., No. 1 Lomita, Torrance, L. Angeles	23- 4-14	4,690	sd. sh. drlg.
M. P. S. Oil, No. 1 Julian, Torrance, Los Angeles	23- 4-14	4,886	sd. sh. drlg.
Moon Oil, No. 2 Julian, Torrance, Los Angeles	23- 4-14	3,787	rigging up
O'Donnell, J. L., No. 42 Lomita, Torrance, L. Angeles	23- 4-14	4,988	O. S. drlg.
Oil Dev., No. 1 Dunphy, Torrance, Los Angeles	23- 4-14	3,294	sd. sh. drlg.
Pennsylvania Oil, No. 1 Lomita, Torrance, L. Angeles	23- 4-14	3,784	sd. sh. drlg.
Pacific West. Oil, No. 2 Marble, Torrance, L. Angeles	15- 4-14	4,871	O. S. drlg.
Packard Pet., No. 3 Kelley, Torrance, Los Angeles	22- 4-14	4,950	flow 198 b.d.
Packard Pet., No. 4 Kelley, Torrance, Los Angeles	22- 4-14	3,691	sd. sh. drlg.
Packard Pet., No. 5 Kelley, Torrance, Los Angeles	22- 4-14	2,153	sd. sh. drlg.
Packard Pet., No. 6 Silver, Torrance, Los Angeles	23- 4-14	4,377	sd. sh. drlg.
Rico Oil, No. 1 Victoria, Torrance, Los Angeles	23- 4-14	4,975	flow 75 b.d.
Standard Oil, No. 1-12 Marble, Torrance, L. Angeles	22- 4-14	4,855	O. S. drlg.
Standard Oil, No. 1-13 Marble, Torrance, L. Angeles	22- 4-14	3,810	rigged up
Star Pet., No. 2 G & A, Torrance, Los Angeles	23- 4-14	4,876	O. S. drlg.
Star Pet., No. 1 Patton, Torrance, Los Angeles	23- 4-14	3,791	sd. sh. drlg.
Star Pet., No. 1 Schatz, Torrance, Los Angeles	23- 4-14	4,962	sd. sh. drlg.
Sol Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	5,202	P. B. 5,144
Sonwell Oil, No. 4, Torrance, Los Angeles	23- 4-14	4,962	sd. sh. drlg.
Ter Heun Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	3,376	sd. sh. drlg.
Texas Co., No. 11 Wilson, Torrance, Los Angeles	14- 4-14	5,026	cleaning out
Texas Co., No. 12 Wilson, Torrance, Los Angeles	22- 4-14	5,010	flow 170 b.d.
Imperial Gypsum, No. 2 Getty, Torrance, Los Angeles	14- 4-14	5,060	tested wet
Imperial Gypsum, No. 3 Getty, Torrance, Los Angeles	14- 4-14	3,747	rigged up
Wertalla, Henry, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,962	flow 297 b.d.
Wilton Oil, No. 5, Torrance, Los Angeles	22- 4-14	4,994	flow 750 b.d.
Young & Bryan, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,385	sd. sh. drlg.
C. C. M. O., No. 8, Torrance, Los Angeles	15- 4-14	4,181	sd. sh. drlg.
C. C. M. O., No. 16, Torrance, Los Angeles	14- 4-14	4,861	sd. sh. drlg.
Calif. Star Oil, No. 1 Lermens, Harbor City, L. Ang.	25- 4-14	2,997	sd. sh. drlg.
Calif. Star Oil, No. 1 O'Brien, Harbor City, L. Ang.	25- 4-14	3,798	sd. sh. drlg.
Isco Pet., No. 1 Block, Harbor City, Los Angeles	30- 4-14	4,990	sd. sh. drlg.
General Pet., No. 9 Poggi, Harbor City, Los Angeles	30- 4-14	3,042	sd. sh. drlg.
Bush Oil, No. 1 Gimenez, Harbor City, Los Angeles	25- 4-13	3,684	sd. sh. drlg.
Union Oil, No. 58 Callender, Dominguez, Los Angeles	33- 3-13	7,550	redrlg. 7,180
Union Oil, No. 61 Callender, Dominguez, Los Angeles	32- 3-13	4,894	sd. sh. drlg.
Union Oil, No. 62 Callender, Dominguez, Los Angeles	33- 3-13	8,359	sd. sh. drlg.
Shell Oil, No. 95 Reyes, Dominguez, Los Angeles	33- 3-13	8,887	O. S. drlg.
Shell Oil, No. 96 Reyes, Dominguez, Los Angeles	33- 3-13	2,050	cmtd. 961
Stabler, W., No. 2 Marland, Dominguez, Los Angeles	3- 4-13	4,294	cleaning out
Barnsdall Oil, No. 5 Trust, Rosecrans, Los Angeles	18- 3-13	7,672	sd. sh. drlg.
Union Oil, No. 21 Rosecrans, Rosecrans, Los Angeles	19- 3-13	7,845	flow 840 b.d.
Union Oil, No. 24 Rosecrans, Rosecrans, Los Angeles	19- 3-13	5,691	sd. sh. drlg.
Universal Consd., No. 5 Trust, Rosecrans, Los Angeles	18- 3-13	2,994	sd. sh. drlg.
Superior Oil, No. 9 Maxwell, Rosecrans, Los Angeles	20- 3-13	7,658	flow 620 b.d.
H. B. Oil, No. 1 Stevens, Rosecrans, Los Angeles	20- 3-13	6,033	cleaning out
Tide Water A., No. 1 Porter, San Fernando, L. Ang.	27- 3-16	3,550	hd. sd drlg.
West Coast Oil, No. 2 Newhall, Los Angeles	27- 4-16	2,782	sd. sh. drlg.
Royal Lands, No. 1 Ramona, Castaic, Los Angeles	8- 4-17	1,083	sd. sh. drlg.
General Pet., No. 39 Harbor, Wilmington, L. Angeles	2- 5-13	2,820	O. S. drlg.
General Pet., No. 43 Harbor, Wilmington, L. Angeles	2- 5-13	3,000	flow 240 b.d.
General Pet., No. 1 P.E., Wilmington, Los Angeles	2- 5-13	4,100	O. S. drlg.
Allied Pet., No. 22, Wilmington, Los Angeles	33- 4-13	3,070	sd. sh. drlg.
Bankline Oil, No. 12-U.P., Wilmington, Los Angeles	2- 5-13	2,160	sd. sh. drlg.
Crail Brothers, No. 1 Mackallister, Wilmington, L. A.	33- 4-13	5,560	rig to pump
Colter, B. T., No. 6 Colter, Wilmington, Los Angeles	32- 4-13	3,630	sd. sh. drlg.
Hancock Oil, No. 12-B, Wilmington, Los Angeles	2- 5-13	4,048	sd. sh. drlg.
Hancock Oil, No. 24-C, Wilmington, Los Angeles	2- 5-13	4,192	P. B. 4,065
Hancock Oil, No. 25-C, Wilmington, Los Angeles	2- 5-13	2,651	sd. sh. drlg.
Hollywood Oil, No. 3 Baxter, Wilmington, L. Angeles	35- 4-13	2,393	sd. sh. drlg.
O'Kane & Brain, No. 1 L.B.H.D., Wilmington, L. Ang.	2- 5-13	2,941	sd. sh. drlg.
Richfield Oil, No. 4-P.D., Wilmington, Los Angeles	2- 5-13	4,166	flow 1,750 b.d.
Richfield Oil, No. 9-P.D., Wilmington, Los Angeles	2- 5-13	3,636	flow 3,000 b.d.
Richfield Oil, No. 1-R.O., Wilmington, Los Angeles	2- 5-13	1,589	sd. sh. drlg.
Richfield Oil, No. 3-P.G., Wilmington, Los Angeles	2- 5-13	4,443	redrlg. 3,891
Royalty Service, No. 7-A, Wilmington, Los Angeles	32- 4-13	2,573	sd. sh. drlg.
Tide Water A., No. 1 Banning, Wilmington, L. Ang.	29- 4-13	3,485	rig to pump
Union Pacific, No. 82, Wilmington, Los Angeles	4- 5-13	1,897	sd. sh. drlg.
Union Pacific, No. 87, Wilmington, Los Angeles	3- 5-13	3,955	flow 1,388 b.d.
Union Pacific, No. 88, Wilmington, Los Angeles	4- 5-13	2,484	sd. sh. drlg.
Union Pacific, No. 89, Wilmington, Los Angeles	4- 5-13	2,791	O. S. drlg.
Wilbur, V. R., No. 3 S.F., Wilmington, Los Angeles	33- 4-13	3,714	sd. sh. drlg.
St. Helens Pet., No. 29 Monterey, Montebello, L. Ang.	2- 2-12	2,091	sd. sh. drlg.
St. Helens Pet., No. 2 Eggleston, Montebello, L. Ang.	2- 2-12	5,710	P. B. 5,663
Union Oil, No. 2 Wilcox, Montebello, Los Angeles	2- 2-12	5,496	sd. sh. drlg.
Union Oil, No. 2 Paul Howard, Montebello, L. Angeles	2- 2-12	5,489	flow 1,575 b.d.
V-8 Oil, No. 1 Estelle, Montebello, Los Angeles	2- 2-12	6,274	O. S. drlg.
West Mon. Oil, No. 2 Seavers, Montebello, Los Angeles	2- 2-12	6,248	sd. sh. drlg.
Mon. Wesco, Inc., No. 1 Seavers, Montebello, L. Ang.	2- 2-12	3,892	sd. sh. drlg.
Standard Oil, No. 1 McDonald, Montebello, L. Ang.	2- 2-12	6,245	flow 581 b.d.
Mont. Res. Oil, No. 1 M. L. & W., Montebello, L. Ang.	2- 2-12	2,342	sd. sh. drlg.
Herley-Kelly, Inc., No. 1 Masser, Montebello, L. Ang.	2- 2-12	2,298	sd. sh. drlg.
McVicar & Rood, No. 2 Manz, Montebello, Los Angeles	2- 2-12	6,259	flow 540 b.d.
Security L. & W., No. 1 Tobey, Whittier, Los Angeles	8- 2-11	1,897	hd. sh. drlg.
Hilldon Oil, No. 4-B-P, North Long Beach, L. Angeles	13- 4-13	3,398	sd. sh. drlg.
Johnston Drlg., No. 34, Long Beach, Los Angeles	13- 4-13	4,552	flow 205 b.d.
Apex Pet., No. 10 Signal, Long Beach, Los Angeles	19- 4-12	2,763	sd. sh. drlg.
Texas Co., No. 2-3 Foster, Long Beach, Los Angeles	19- 4-12	4,797	sd. sh. drlg.
De Soto Oil, No. 1, Long Beach, Los Angeles	30- 4-12	6,471	sd. sh. drlg.
Texas Co., No. 3 Alamitos, Seal Beach, Orange	3- 5-12	5,225	sd. sh. drlg.
Brea Canyon Oil, No. 48, Brea Canyon, Orange	2- 3-10	5,064	P. B. 4,988
Battersby, J. M., No. 1 Carmenita, Orange	21- 3-11	7,312	hd. sh. drlg.
Severns Drlg., No. 1-A McNally, West Coyote, Orange	24- 3-11	5,361	sd. sh. drlg.
Standard Oil, No. 3 Bastanchury, W. Coyote, Orange	16- 3-10	3,202	sd. sh. drlg.
Shell Oil, No. 1 Cuff, Richfield, Orange	29- 3-9	3,096	P. B. 2,460
Beth Oil, No. 1 Dillingham, Yorba, Orange	21- 3-9	2,338	P. B. 1,500
Richfield Consd. Oil, No. 2 Todd, Yorba, Orange	21- 3-9	1,744	bailing
A. V. Oil, No. 1, Costa Mesa, Orange	16- 6-10	4,640	fish D. P.
So. Counties Oil, No. 1 Serrano, San Bernardino	22- 2-8	671	sd. sh. drlg.

OKLAHOMA

Week Ending August 20

NORTHERN OKLAHOMA

Beckham County

Wagner & Stogner No. 1 McGee, NE NE SE sec. 25-8-22w. O.W.D.D.; T.D. 1,029 ft.; S.G.; S.D.

Coal County

Carter et al No. 1 Mote, C E½ SW NW Sec. 19-2-10. Drlg. 6,083 ft.

Comanche County

E. N. Eldridge No. 1 Aetna Life, SW SE SW Sec. 2-1-10w. Drlg. 510 ft.

Midnite O. & G. Co. No. 1 Howe, NW NW NW Sec. 20-2n-12w. T.D. 550 ft.; U.R.

Clyde Roach No. 1-A Green, SE SE SW Sec. 2-1-13w. Drlg. 750 ft.

Creek County

Burk-Greis Oil Co. No. 1 Goodman, NE NE SW Sec. 20-14-7. Drlg. 1,247 ft.

Garfield County

Champlin Ref. Co. No. 1 Boehm, SW SW NE sec. 4-24-8w. Drlg. 6,090 ft. in Miss. L.

I.T.I.O. No. 1 Kechin, C SE SE sec. 17-22-5w. T.D. 5,763 ft.; S.D. for D.P.

Garvin County

H. R. Hollenbach et al No. 1 Butterly, NE NE SE sec. 22-1n-1e. 3,218,000 ft. gas; drlg. 3,205 ft.; S.D.; repairs.

Hughes County

City of Holdenville No. 1 Fairgrounds, SE SE SE sec. 13-7-8. T.D. 1,160 ft.; S.D.

Kay County

Clark C. Nye No. 1 Willin, SE SE SW sec. 24-27-4. Cg. 3,016 ft.; S.S.O.&G.; S.D. for mach.

Louis Blosser No. 1 Rudolph, NE NE SW Sec. 27-29-1w. T.D. 3,500 ft.; W. O.S.T.

Kiowa County

Anderson-Prichard Oil Corp. No. 1 Sch. Ld., SE SE SE Sec. 14-6n-17w. T.D. 1,896 ft.; S.D.O.

Hughes & Reese No. 1 Fultz, SE SE SE Sec. 10-6-18w. T.D. 1,238 ft.; W.O.C.

Lincoln County

British-American No. 1 Markwell, C E½ E½ NE Sec. 26-12-4. Drlg. 4,505 ft.

Indian States No. 1 Bailey, NW NW NE Sec. 2-12-5. T.D. 4,238 ft.; flwd. 134 B.O.P.D.; to run tbg.

Noble County

H. R. Hollenback No. 1 Mathews, C SW NW Sec. 9-20-1. T.D. 3,597 ft.; S.D.

Okfuskee County

Amerada No. 1 Conard, NE NW SW sec. 33-10-10. First Wilcox 4,028 ft.; drlg. 4,054 ft.

C. W. Titus No. 1 Lehmar, C NE NE Sec. 26-11-8. Deepened to 3,485 ft.; flwd. 137 B.O. in 24 hrs.

Oklahoma County

Fain Drlg. No. 1 Little, SW SW NE sec. 28-11-3w. Dolo. 6,765 ft.; second Wilcox 6,952-88 ft.; wtr.; deepening.

Olson Oil No. 1 L. Vaneck, SE SW NW Sec. 4-12-3w. T.D. 6,766 ft.; flwd. 8 to 10 B.O.P.H.

Osage County

Chevalier-Simon No. 1 Osage, NW NW SW Sec. 33-27-5. T.D. 3,504 ft.; D.&A.

Norbia Oil Co. No. 1 Osage, SE cor. sec. 18-25-7. T.D. 2,784 ft.

Payne County

Sinclair-Prairie No. 1 McQuain, NE NW NE Sec. 22-19-1. Misener sd. 4,790 ft.; S.D.O.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW sec. 4-2-15. T.D. 1,040 ft.; S.D.

Pontotoc County

Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. T.D. 4,572 ft.; P.B. 4,490 ft.; rip in csg.; P.B. 4,090 ft.; S.D.

H. Z. Moore No. 1 Payne, SE NW SE Sec. 16-4-4. T.D. 997 ft.; S.S.O.; S.D.

Union Dev. Co. No. 1-A Abbott, SW NW NE sec. 34-3-6. T.D. 2,013 ft.; S.D.

Pottawatomie County

Atlantic Ref. Co. No. 1-A McCurry, NW NE SW sec. 6-6-4. Pay 4,204 ft.; T.D. 4,209½ ft.; flwd. 108 B.O. in 7 hrs. through tbg.

Hall & Briscoe No. 1 Merkle, NW NW SE Sec. 32-8-5. Rig.

Geo. L. Pace No. 1 Riley, NE NE SE Sec. 2-9-3. Drlg. 300 ft.

A. D. Spears No. 1 Vinson, SW NW SW Sec. 29-8-5. Drlg. 1,660 ft.

Seminole County

Boetcher O. & G. No. 1 Morgan, SE NE NW sec. 8-5n-7. Drlg. 1,955 ft.

Young & Newsom No. 1 Edgeman, SE SE SE sec. 17-7-6. Wilcox 4,378-80 ft.; T.D.; pmpd. 396 B.O.P.D.; putting on standard pmp.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. T.D. 1,551 ft.; rmg.

[illegible] McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. T.D. 2,172 ft.; S.D.

SOUTHERN OKLAHOMA

Atoka County

C. M. Sheldon and Gardner Pet. Co. No. 1 Lee, NE NW SW sec. 2-4s-10e. Arb. 2,843 ft.; S.D. 3,455 ft.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. T.D. 905 ft.; to set 8-in. csg.

Love County

Sinclair Prairie Oil Co. No. 1 Peabody, NE cor. sec. 35-6s-2w. Drlg. sh. 6,457 ft.

Tillman County

Smith No. 2 Hammel, NE NW NW sec. 6-5s-15w. T.D. 2,200 ft.; fsg.

KANSAS

Week Ending August 20 (Descriptions are East unless marked otherwise)

Barton County

C. L. Carlock and Atlantic Ref. Co. No. 1 Demel, NE NW sec. 30-17-13w. C.O. 470 ft.

Crown Pet. Corp. No. 1 Wolf, SE SW SE sec. 36-19-12w. T.D. 3,374 ft.; acd. S. 20 B.O.P.H.

Butler County

Pryor & Lockhart No. 1 Lietzke, NE SW NW Sec. 24-28-7. U.R. 1,360 ft.

Roy Ramsey No. 2 fee, NE NE sec. 28-16-3w. Drlg. 2,440 ft.

Simpson Oil No. 1 Equitable Life Ins., SW Sec. 15-25-3. C.O. 2,835 ft.

Soloman & Alexander No. 1 Sawyer, SW NW SW sec. 2-28-7. Drlg. 103 ft.

Tide Water Oil Co. No. 1 Noel, NE SW Sec. 18-23-5e. Drlg. 1,700 ft.

Cowley County

Ben Grajano et al No. 1-A Clark, NW NW NE Sec. 11-31-3e. Rig.

McKnob et al No. 1 O'Neil, NW NW SE sec. 27-32-3. Drlg. 1,000 ft.; approx.

Ellis County

C. B. Davis No. 1 Smith, SW NW NE Sec. 11-12-16w. Simpson 3,382-85 ft.; 2,000 ft. O.I.H.

Ford County

Sinclair Prairie Oil Co. No. 1 Young, CSL NE sec. 34-27-21w. Viola 5,350 ft.; dolomite at 5,512 ft.; Wilcox 5,617 ft.; Arb. 5,629 ft.; T.D. 5,930 ft.; P.B. 5,025 ft.; flwd. 56 B.F. in 8 hrs.; S.I.

Greenwood County

Z. Dunalp et al No. 1 Warren, NW NW SW sec. 4-28-10. Drlg. 790 ft.

Fullerton et al No. 1 Bates, NE SW SE sec. 32-26-11. Drlg. 20 ft.

Ward McGinnis No. 3 Smith, NW NE NE Sec. 10-24-13. Fsg. 1,215 ft.

Kingman County

Bunte Bros. No. 1 Shepard, SE SE SE sec. 10-27-10w. Arb. 4,488 ft.; T.D. 4,529 ft.; P.B. to Miss. at 4,028 ft.; set csg. 4,075 ft.; W.O.C.

McPherson County

Marylyn Oil No. 1 Dixon, NW NE NW sec. 7-19-2w. S.D. 1,850 ft.

Marion County

Johnson et al No. 1-A Miltz, SW SW SW Sec. 24-17-4. Drlg. 1,900 ft.

Harwood Oil Co. No. 1 Kaufman, NW NW SE sec. 27-17-4. Fsg. 1,240 ft.

Mead County

Cragin, Reeuscher & Turner No. 1 Adams, NW NW SE sec. 22-34-30w. T.D. 200 ft.; R.U.R.

Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. Rng. 10-in. 1,350 ft.

Ness County

Sinclair-Prairie No. 1 McKinley "A," SW NW Sec. 26-18-26w. Drlg. 3,180 ft.

Norton County

Vickers Pet. Co. No. 1 Bozarth, C SW SW Sec. 15-5-24w. Cg. 3,463 ft.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW Sec. 18-10-2w. U.R. 10-in. 2,050 ft.

Reno County

Carter Oil Co. No. 8 Hogan, NW SE SW sec. 19-24-42. Drlg. 340 ft.

L. E. Douglas et al No. 1 Durand SE SE SW sec. 3-23-5w. S.D. 3,600 ft.

Rice County

Cities Service No. 1 Flora, SW SW NE Sec. 12-19-10w. Arb. 3,300-38 ft.; S. D.O.

Cities Service No. 1 Frees, CL S½ NW Sec. 20-18-9w. Arb. 3,268-99 ft.; D.&A.

Marylyn Oil Co. et al No. 1 Vincent, N½ NW NE sec. 5-21-10w. Drlg. 3,357 ft.

Watchorn O. & G. Co. No. 1 Caldwell, NE SE NE Sec. 29-20-9w. Rotary rig.

Rooks County

Fred Haines et al No. 1 Dorr, SE SE SW Sec. 13-9s-16w. Drlg. 3,400 ft.

J. J. Hall No. 1 Kruse, SE NE sec. 3-1-16w. T.D. 3,126 ft.; P.B. 3,121 ft.; acd.; P. 150 B.O.P.D.

Producers Oil No. 1 Ham, SW NW sec. 25-7-19w. S.D. 1,800 ft.

Rush County

Phillips Pet. Co. No. 1 John Kees, C SE SE sec. 3-19-20w. T.D. 2,500 ft.; S.I. for csg.

Russell County

J. J. Hall No. 1 Landon, SW SE sec. 11-15-14w. T.D. 3,100 ft.; 1,800 ft. O.I.H. W.O.C.

Geo. Hinkle No. 1 Kaufman, SE NW sec. 10-15-12w. Drlg. 2,882 ft.

R. H. Shields No. 1 Anschutz, SW SE sec. 2-14-13w. Drlg. 3,362 ft.

Stearns No. 1 Stielow, NW cor. sec. 2-11-14w. Drlg. 3,283 ft.

Saline County

Sullivan & Sidwell No. 1 Erickson, NE NE Sec. 28-16-3w. Drlg. 1,360 ft.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE Sec. 35-28-1e. Set 7-in. csg. 2,255 ft.; C.O.

Union O. & R. Co. et al No. 1 Howell, SE cor. sec. 6-29-1e. S.D. 3,550 ft.

Stafford County

Atlantic Ref. Co. No. 1 Wise, NW cor. sec. 13-24-14w. T.D. 3,755 ft.; 5,300,000 ft. gas and 6½ B.F.P.H.

Newbold & Springrose No. 1 Walker, NE NE SW sec. 24-24-12w. Drlg. 2,150 ft.

H. L. Rowley No. 1 Sittner, SE SE NE Sec. 35-21-12w. Arb. 3,565 ft.; R.U.S. T. 3,575 ft.

Stanolind O. & G. Co. No. 1 Curtis, SE cor. sec. 31-21-12w. Rotary rig.

Woodson County

Joe Nathan No. 1 Ellis, NW NW SE Sec. 35-25-14. U.R. 1,480 ft.

ARKANSAS

Calhoun County

C. E. Murdock No. 1 Southern Kraft Corp., SE cor. NW NW sec. 17-14-13. T.D. 10 ft.; S.D.; clearing titles.

Cleveland County

W. E. Allaum, Tr., No. 1 Moore Est., SW cor. SE NW sec. 34-9-10. Set 10¾-in. 170 ft.; S.D. 2,915 ft.

Columbia County

Atlantic Ref. Co. No. 1 Baker, C SE NW Sec. 13-17-20. Drlg. 5,125 ft.

Atlantic Ref. Co. No. 1 Harrington, C SW NW sec. 14-17-20. Top anhy. 3,149 ft.; bttm. anhy. 3,235 ft.; D.S. stk. 5,959 ft.

Fohs Oil Co. No. 1 Phillips, C NW SW sec. 15-17-19. D.S.T. 7,357-89 ft.; 15½ min.; ¼-in. cks. top and bttm.; rec. 15 ft. oil and 100 ft. S.W.; 275 ft. drlg. fluid; W.P. 600 lbs.; rmd. to 7,383 ft.; D.S.T. 7,383-89 ft.; 35 min.; ⅝-in. cks. top and bttm.; rec. 2,500 ft. oil, 360 ft. mud and 120 ft. S.W.; set 7-in. csg. 7,412 ft.; T.D. 7,424 ft.; perf. 7,380-85 ft.; D.S.T.; set pkr. 7,375 ft. open at top; ¼-in. ck. on bttm.; flwd. S.W. and very slight S.O. after 51 min.; flwd. for 45 min.; S.W.; recmtd. csg. to reperf. higher; set 7-in. 7,412 ft.; comp.; 125 B.O.P.D.

Pet. Finance Co. No. 1 Baker, C SW NW Sec. 13-17-20. U.R. 5,375 ft.

Standard Oil Co. of La. No. 1 T. Crumpler, sec. 15-17-19. Cg. 7,447 ft.; top por. oolitic L. 7,380 ft.; W.O.C.; recmtg.

Standard Oil Co. No. 1 E. D. Harris. Drk.

Standard Oil Co. of La. No. 3 McKean, NE SE sec. 7-16-22. Set 6-in. csg. 7,205 ft.; comp.; 25 B.O.P.D.

G. H. Vaughn No. 1 Garrett, C NE SE sec. 14-17-20. Drk.

Craighead County

Tannark, Inc., No. 1 Ruby M. Martin, 580 ft. N line, 80 ft. E line, sec. 35-14n-3e. M.I.C.T. 1,754 ft.

Crittendon County

Stanley Oil Corp. No. 1 Danner hrs., O.W.W.O.; old T.D. 2,790 ft.; rng. 4-in. csg. to set on bttm.; will use 1 jt. perf. csg. 3,219-3,176 ft.; T.D. 3,351 ft.

Lafayette County

Standard Oil Co. of La. No. 1 J. L. Warren, 1,980 ft. E line, 610 ft. N line, sec. 18-16-22. Top anhy. 3,279 ft.; T.D. 7,254 ft.; L.; acdzd. with 5,000 gal.; comp.; 30 B.O.P.D.

Little River County

M. E. Sanderson No. 1 Pinny; O.W.W.O.; reported abd. 1,300 ft.; NE cor. NE SW sec. 6-13-30. S.D. 1,324 ft.

Joe G. Straham et al No. 2 Dierks Lbr. Co. Top L. 2,425 ft.; S.D. 3,225 ft.

Miller County—Rodessa

F. W. Burford No. 1 H. C. Mitchell, NW cor. NW NE Sec. 11-20-28. T.D. 6,180 ft.

Gerhig No. 2 Mitchell. Drlg. 2,315 ft.

Hill & Eastabrook No. 1 Sherman, SW NW Sec. 29-19-28. D.&A. 6,330 ft.

Red River Valley Oil Co. No. 1 Beck. Sec. 34-15-26. T.D. 3,380 ft.; prep. to perf. csg.

Nevada County

Texas Canadian Oil Corp. No. 1 Stocks, C NW SE sec. 9-15s-22w. Drlg. 50 ft.

Bruce E. Wallace No. 2 Haynie, SE cor. SE NE sec. 5-14-21. Sdy. sh. 1,194-1,204 ft.; tstd. mud, S.W. and oil 1,198-1,214 ft.; 30 min.; W.O.; T.D. 1,214 ft. set 6-in. csg. 1,198 ft.; swbd. est. 10 bbls. oil; S.D. 1,214 ft.

Pulaski County

Coker Oil Corp. No. 1 Stone, sec. 36-3n-11w. S.D. 905 ft.

A. L. Kitselman No. 2 A. L. Kitselman, Jr., SE SE SW sec. 2-1s-13e. T.D. 2,900 ft.; lost circ.; P.B. surf.; S.D. 3,250 ft.

Union County—Schuler

Atlantic Ref. No. 2 Dumas. R.U.

Atlantic Ref. Co. No. 1 Rogers, sec. 16-18-17. Set 7-in. 7,621 ft.; comp.; 466 B.O. in 5 hrs.

Crescent Drlg. Co. No. 1 Lewis, SE SW sec. 16-18-17. Drlg. 2,100 ft.; last report.

Crescent Drlg. No. 1 Sewell. R.U.

E. M. Jones No. 1 Gallagher. O.W.T.D.; R.U. to deepen.

E. M. Jones No. 1 C. H. Murphy, NW cor. Lot 6, NW sec. 19-18-17. O.W.D. D.; cg. 7,691 ft.

E. M. Jones No. 2 Rogers, SW SW sec. 16-18-17. Comp.; 50 B.O.P.D.

Lion Oil Ref. Co. No. 2 Clarence. T.D. 1,955 ft.

Lion Oil Ref. Co. No. 1 Dee, sec. 17-18-17. T.D. 7,725 ft.

Lion Oil Ref. No. 2 "D." Drlg. 3,250 ft.

Lion Oil Ref. Co. No. 2 Marcus. 330 ft. SE cor. Lot 3, SE sec. 18-18-17. Top Jones sd. 7,521 ft.; top L. 7,621-89 ft.; set 7-in. csg. 7,713 ft.; T.D. 7,720 ft.

Lion Oil Ref. Co. No. 3 Marcus, SW cor. Lot 5, NW Sec. 18-18-17. Prep. test 7,718 ft.

Lion Oil Ref. Co. No. 4 Marcus, NW cor. Lot 3, SW Sec. 18-18-17. Drlg. 7,272 ft.

Lion Oil Ref. Co. No. 2 Marine Oil Co., SE cor. Lot 1, SW sec. 7-18-17. Drlg. 3,485 ft.; last report.

Lion Oil Ref. No. 4 Marine. Loc.

Lion Oil Ref. No. 6-A Morgan. Set 16-in. 118 ft.

Lion Oil Ref. Co. No. 1 Natl., NW cor. NE SW Sec. 17-18-17. Drlg. 6,440 ft.

Lion Oil Ref. Co. No. 2 Nelson, Lot 6, Sec. 18-18-17. Drlg. 5,948 ft.

Lion Oil Ref. Co. No. 1 H. P. Sewell, NE cor. Lot 4, NW sec. 18-18-17. Set 10¾-in. csg. 1,902 ft.; drlg. 4,434 ft.

J. R. Lockhart No. 2 Rauliston. Loc.

Marine Oil Co. No. 2 J. H. Calloway, NW cor. E½ SE NE sec. 13-18-18. Set 16-in. csg. 142 ft.; drlg. 6,612 ft.

Phillips Pet. No. 1 Bryan. Loc.

Phillips Pet. No. 1 Eldorado. Loc.

Phillips Pet. No. 1 Milleing. Loc.

Phillips Pet. Co. No. 1 Miller, NE cor. Lot 4, SW Sec. 18-18-17. Drlg. 7,587 ft.

Phillips No. 2 Nelson. R.U.

Phillips Pet. Co. No. 1 Sewell, SW cor. Lot 5, SW Sec. 7-18-17. Drlg. 7,632 ft.

Roberts & Murphy No. 2 C. D. Justiss, NW cor. Lot 6, SW sec. 7-18-17. R.U.

Roberts & Murphy No. 2 Justiss. Set 16-in. 120 ft.; 10-in. 1,782 ft.

Union County—Other

J. R. Lockhart No. 1 Rauliston, sec. 12-17-14. Cd. oil sd. 3,160-75 ft.; D.S.T. 3,172-75 ft.; rec. drlg. fluid and S.W.; cd. 3,175-85 ft.; S.O.; salty taste; set 7-in. csg. 3,077 ft.; perf. 3,002-07 ft.; tstd. 2,750 ft. S.W.; reperf. 2,967-73 ft.; blew wild; est. 500 bbls. S.W.; P.B. 2,700 ft.; drld. out cmt. 2,980 ft.; perf. 2,968-76 ft.; set pkr. 2,960 ft.; tstd. 1,500,000 ft. gas; prep. tst. 3,033 ft.

Joe Modisette et al No. 2 Union Saw mill Co., sec. 8-18-12. T.D. 3,354 ft., S.W. sd. 3,554-67 ft.; ran Schlumberger and set 9⅝-in. csg. 3,009 ft.; U.R. 6,107 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville County

DeSoto O. & G. Co. No. 1 Fleming, C NW NW sec. 18-16-9. Ran Schlum. W.O.C. 5,300 ft.

Bossier Parish

W. M. Chambers No. 1 Thomas, SE cor. Sec. 10-22-11. S.D. 635 ft.

C. H. French No. 1 Weaver, sec. 14-19-11. W.O.C. 377 ft.

Premier Inv. Co. No. 1 Community Corp., sec. 22-19-11. S.D. 310 ft.

Premier Inv. Co. No. 4 Connell. W.O.S. R. 312 ft.

Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. Tstd. est. 1,000,000 ft. gas; S.I.; T.D. 2,374 ft.; top oolitic L. 2,345 ft.; set 5½-in. csg. 2,300 ft. without cmt.; set 7-in. csg. 2,026 ft. without cmt.; tstd. est. 1,000,000 ft. gas, S.S.O.; W.O.S.R. 2,384 ft.

Premier Inv. Co. No. 52 Wyche, NW cor. sec. 14-19-11. Set 10¾-in. csg. 96 ft.; T.D. 435 ft.; comp.; 25 B.O.P.D.

Sloan, Lloyd et al No. 1 Sherrill, sec. 12-19-12. T.D. 780 ft.; set 5½-n. 778 ft.; trtd. with 1,000 gal. acd.; tstd. dry; T.D. 770 ft.

Triangle Drlg. Co. No. 1-A R. O. Roy, SW cor. NW Sec. 18-17-11. Tstg. 3,148 ft.

Caddo Parish

J. W. Bailey No. 2 Caddo Lvy. Bd., SE cor. Sec. 36-21-16. R.U.

S. H. Caddisy No. 1 Caddo Lve. Bd. R.U.

J. E. Carroll et al No. 1 Stiles, SW cor. NE sec. 17-21-16. Set 6-in. csg. 1,009 ft.; W.O.S.R. 1,014 ft.

Paul Cooper et al No. 1 Stiles, SE cor. NE NW Sec. 33-21-16. Drlg. 1,440 ft.

Falcon Oil Co. No. 2 Glassell-Youree, SE cor. sec. 26-20-15. W.O.C. 2,306 ft.

M. M. Ferrell No. 1 Dial. Drlg. 525 ft.

C. G. Gibbons No. 1-A State Lv. Bd., sec. 17-21-16. Set 8-in. csg. 1,015 ft.; T.D. 1,029 ft.; comp.; 20 B.O.P.D.

J. T. Humphrey No. 2 Caddo Lve. Bd. W.O.C. 935 ft.

McClanahan et al No. 1 Muslow, NE NW sec. 31-21-15. Set 10¾-in. csg. 40 ft.; S.D.

Midfield Oil Co. No. 6 Muslow, NE cor. SE SW sec. 6-20-15. Set 10¾-in. csg. 96 ft.; T.D. 1,660 ft.; 40 B.O.P.D.

Midfield Oil Co. No. 7 Muslow. W.O.C. 1,324 ft.

Midfield Oil Co. No. 8 Muslow. Loc.

J. Ober & Sons No. 1 fee, SE cor. sec. 36-21-16. Drlg. 925 ft.

Oils, Inc., No. 1 Cazaux, sec. 10-16-13. Drlg. 2,895 ft.

Papadokis & Poppas No. 1 Speil. W.O. C. 40 ft.

J. E. Sedberry No. 1-A Dickinson, SW cor. sec. 10-19-14. Drlg. 2,410 ft.

Southern Star Pet. Corp. No. 1 Muslow, SE NW sec. 17-20-15. O.W.W.O.; old T.D. 1,500 ft.; set 8-in. csg. 1,350 ft.; T.D. 1,860 ft.; W.O.S.R.

Southern Star Pet. Corp. No. 2 Muslow, NE cor. SE NW sec. 17-20-15. Drlg. 1,319 ft.

Nat Wiseman No. 3 Stiles, NW cor. SE SW Sec. 27-21-16. D.&A. 1,705 ft.

Nat Wiseman No. 4 Stiles. T.D. 800 ft.

Caldwell Parish

G. W. Ziegen No. 14 La. Central, SW cor. Sec. 20-14-3e. D.&A. 1,760 ft.

Claiborne Parish

J. H. Henry No. 1 McDonald, NE cor SE Sec. 3-20-5. Drlg. 4,520 ft.

Lyons & Neely No. 1 Kilgore, C NW SE Sec. 11-20-5. T.D. 5,427 ft.; 15 B.O.P. H.

W. H. North No. 1 Lowery, C NE NW Sec. 14-20-5. W.O. 5,327 ft.

Oakes et al No. 1 Kilgore, NE cor. SE sec. 28-21-15. D.S.T. 4,188-4,225 ft.; tstd. dry in 5 min.; set 5¾-in. csg. 5,290 ft.; T.D. 5,313 ft.; set perf. lnr.; tstd. dry; washed with oil and acdz with 2,000 gal. and 150 bbls. oil; swb dry; think csg. seat gave away; recmt. csg.; cor. depth 5,270 ft.; cor. T.D. 5,357 ft.; re-acdz.

H. O. Olson No. 1 L. L. Lowery. R.U.

Prairie O. & G. Co. No. 2 Lloyd, C SE NE Sec. 10-20-5. T.D. 5,356 ft.; 50 B. O.P.D.

Rodessa O. & R. Co. No. 1 Lloyd. Drlg. 3,580 ft.

Sklar Oil Corp. No. 1 Lowery, C SW SW Sec. 14-20-5. W.O. 5,340 ft.

Texas Canadian Oil Co. No. 1-B Lowery, C NE NE Sec. 14-20-5. Tstg. 5,296 ft.

Texas Canadian Oil Co. No. 1 Patton, C SW SW Sec. 12-20-5. W.O.C. 5,582 ft.

Concordia Parish

Edw. Addy et al No. 1 Posternack, NW SW Sec. 49-8n-9e. Tstg. 1,382 ft.

Morrison & Co. No. 1 Winston, sec. 42-7-9e. Whipstock 2,000 ft.; drlg. in new hole at 2,800 ft.

De Soto Parish

S. S. Alexander No. 1-A Stoll, sec. 5-12-16. Cg. 1,523 ft.

G. H. Collins et al No. 2 Joiner, sec. 28-11-12. W.O.C. 2,925 ft.

Paul Miller et al No. 2 Jal Drlg. Co., NE Sec. 5-11-11. Drlg. 1,400 ft.

Petroleum Heat & Power Co. No. 2 Kavanaugh, NE cor. NW SW sec. 7-11-11. Tstd. dry 2,874 ft.; W.O.

Pet. Heat & Power Co. No. 1 Rives, sec. 20-12-11. S.D. 3,620 ft.

Grant Parish

C. R. Bowers No. 1 Harrison Est., sec. 21-8-5. S.D. 1,091 ft.

Rogers Prod. Corp. No. 3-A Holmes, SW cor. sec. 17-9n-1e. Set 4-in. csg. 82 ft.; W.O.S.R. 1,060 ft.

La Salle Parish

O. L. Black No. 1 Tullas. Cg. 1,400 ft.

Lincoln Parish

Harry Fotiades No. 2-B Patton, C NW SW sec. 7-20-4. Set 5½-in. csg. 5,335 ft.; T.D. 5,368 ft.; top por. L. 5,337 ft.; T.D. 5,386 ft.; 384 B.O.P.D.

Magnolia Pet. Co. No. 1 Fuller, C SE SW sec. 5-20-4. Set 7-in. csg. 5,357 ft.; acdzd. with 1,300 gal.; T.D. 5,371 ft.; 50 B.O.P.D.

Madison Parish

Continental Oil Co. No. 1 Singer Mfg Co., C NE NW sec. 3-15-11e. Drlg. 2,965 ft.

Morehouse Parish

Union Prod. Co. No. 2 Nadchous Sch. Lds. Loc.

Natchitoches Parish

Jos. E. Popkins No. 1 Peavy Lbr. Co., sec. 36-7n-9w. S.D. 510 ft.

Red River Parish

H. D. Rogers No. 3 Long Bell Lbr. Co.,

McGREGOR

45 YEARS

OUR 15 Different types of working barrels and pumps are the result of 45 years of practical field experience. We also make all sizes and kinds of Balls and Seats, Valves, Cups, etc.

Ask for booklet.

McGREGOR WORKING BARREL COMPANY

Bradford, Pa. U.S.A.

sec. 30-13-9. Set 6-in. csg. top Nacatoch 1,079 ft.; tstg. 1,119 ft.

Sabine Parish

Addison & Peterson No. 1 Dew, SE cor. SW SE Sec. 22-8-11. T.D. 485 ft.

W. L. McClanahan No. 1 Frost Lbr. Co. sec. 22-9-13. D.S.T. 2,927-3,028 ft.; tstd. est. 1,000,000 ft. gas and 9 jts. mud; ¼-in. ck.; blew out 4,745 ft.; S.W., mud and gas; cd. hd. sh.&L. 4,745-54 ft.; S.D.; W.O. 5,710 ft.

Major Oil Co. No. 4 Bowman-Hicks, C NW SW Sec. 7-7-12. Tstg. 2,306 ft.

Harry N. Morris No. 1-B Irving & Bishop, C SW NW sec. 18-7-12. Aczd. with 2,000 gal.; tstd. dry 2,690 ft.; T. D. 2,839 ft.

Hunter Co. No. 6 Bowman & Hicks, Drlg. 50 ft.

Hunter Co. No. 1-A La. Long Leaf Lbr. Co., NE cor. sec. 19-7-12. T.D. 3,015 ft.; S.W. and abd.

Richards & Holloway No. 1 J. E. Bauer, SW cor. Sec. 7-7-12. D.&A. 2,375 ft.

Richards & Holloway No. 1 Bowman & Hicks, Zwolle area. W.O.C. 2,147 ft.

C. R. Schuster No. 1 Mary Garcia, NE cor. NW SE Sec. 15-7-13. T.D. 2,603 ft.

Sklar & Sugar No. 1 Procella, NW NE sec. 18-7-12. Set 7-in. csg. 2,478 ft.; tstg. small S.G. 2,908 ft.; P.B. 2,670 ft.; tstd. small S.O.&G.; tstd. S.W.; D. &A. 2,908 ft.

H. M. Sneed No. 1 Leone, 330 ft. S line, 400 ft. W line, NW SE sec. 8-7-13. R.U.

Tropical Oil Co. No. 1 Long Bell Lbr. Co., Sec. 5-8-13. T.D. 2,178 ft.

Voline Oil Co. No. 1 First Natl. Bnk., sec 18-7-12. Top ch. 2,460 ft.; tstg. dry 2,975 ft.; W.O.

Lee Whitehurst No. 1 First Natl. Bnk. of Shreveport, sec. 14-7-13. Set 10-in. 82 ft.; set 7-in. csg. 2,152 ft.; S.O. & S.W.; cmtd. on bttm; used 2,000 gal. acd.; prep. acd. 2,197 ft.

Zwolle Synd. No. 1 Mansfield Lbr. Co., Sec. 8-7-19. Drlg. 3,850 ft.

Webster Parish

Hunt Oil Co. No. 8 Babb, sec. 13-21-10. Top Holloway sd. 5,642 ft.; set 9⅝-in. csg. 5,627 ft.; T.D. 5,980 ft.; Holloway sd. tstd. dry; drlg. 8,084 ft.

Hunt Oil Co. No. 2 Bodcaw Lbr. Co., NE cor. Sec. 33-21-10. T.D. 5,760 ft.

Hunt Oil Co. No. 3 Bodcaw-Stewart, C NW SW Sec. 34-21-10. Drlg. 5,896 ft.

Hunt Oil Co. No. 20 Hope, C NE NW sec. 24-21-10. Top Holloway sd. 5,596-5,604 ft.; set 9⅝-in. csg. 5,580 ft.; did not test Holloway sd.; drlg. 7,956 ft.

Hunt Oil Co No. 1 Pardee, sec. 24-21-10. Set 13⅜-in. csg. 797 ft.; drlg. 6,060 ft.

Hunt Oil Co. No. 1 Sandifer, C NE NE Sec. 4-20-10. Drlg. 4,995 ft.

Magnolia Pet. Co. No. 4 Cox, sec. 23-21-10. W.O.C. 5,819 ft.; D.S.T. failed.

Magnolia Pet. Co. No. 1 Merritt Unit, C SW NW Sec. 14-21-10. Drlg. 4,265 ft.

Magnolia Pet. Co. No. 1-C Pardee, C NW NE Sec. 17-23-11. U.R. 5,600 ft.

Midstates Oil Corp. No. 1 Welori Lbr. Co. Unit, NE cor. NW sec. 3-20-10 Drlg. 3,326 ft.

Harry Morgan No. 2-A Hope, C SE SW Sec. 24-21-10. Drlg. 6,873 ft.

North American Oil Consol. Co. No. 1 Barrow, C NE NW sec. 21-21-10. Top Trv. Pk. 5,889 ft.; set 9⅝-in. 5,945 ft.; no Holloway sd.; drlg. 8,269 ft.

Ohio Oil Co. No. 4 Cox, Acct. 2, C SW Sec. 15-21-10. W.O.C. 8,602 ft.

Oliphant Oil Corp. No. 1-B Stewart, C NW NE Sec. 5-20-10. Drlg. 6,041 ft.

Oliphant Oil Corp. No. 2-B Stewart, C NW NW Sec. 4-20-10. Straightening hole 2,200 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 2 J. A. Brookshire, sec. 66-12s-3e. T.D. 7,902 ft.; 6-in. csg. 7,902 ft.; tstd. S.W. and sd. perf. csg. 7,892-95 ft.; tstd. oil and S.W.; sqzd. off perf.; W.O.C.

Continental Oil Co. No. 1 Franciol, sec. 67-12s-3e. Drk.

Anse La Butte—St. Martin Parish

Louisiana-Crusader No. 3 Central Oil Co., sec. 86-9s-5e. S.D. 421 ft.

Mary G. Thomas No. 1 J. A. Broussard, Sec. 117-9s-5e. Top salt 1,788 ft.; T.D. 1,792 ft.; S.D.

Bancroft—Beauregard Parish

Republic Prod. Co. No. 1 Columbia Ld & Tmbr. Co., sec. 16-6s-13w. T.D. 7,388 ft.; 7-in. csg. 7,368 ft.; perf. csg. 7,320-30 ft.; flwg. est. 400 bbls. of 37-grav. oil; ¼-in. ck.; T.P. 1,550 lbs.; C.P. 1,510 lbs.

Bateman Lake—St. Mary Parish

Texas Co. No. 1 Wax Bayou, sec. 21-16s-12e. Drlg. sh. 8,940 ft.

Baton Rouge—East Baton Rouge Parish

Wm. Helis et al No. 2-A La. State University, Sec. 66-7s-1w. Drlg. sh. 1,220 ft.

Wm. Helis No. 1 Harry Nelson, sec. 36-7s-1w. Cd. oil sd. 6,477-6,500 ft.; T.D. 7,710 ft.; D.P. stk.; P.B.; sdtrkd.; drlg. sh. 2,800 ft.

Bay St. Elaine—Terrebonne Parish

F. L. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. T.D. 870 ft.; abd.

Texas Co. No. 4 State-Bay St. Elaine, sec. 19-23s-20e. Rig.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 7 A. Wilberts, Sec. 66-9s-11e. Cg. sd. 6,259 ft.

Bayou Choctaw—West Baton Rouge

La. Crusader Oil Co. No. 3 Schwing, sec. 29-8s-11e. Drlg. sd.&sh. 6,424 ft.

Standard Oil Co. et al No. 1 Marley Cypress Co., Sec. 29-8s-11e. T.D. 7,473 ft.; fsg.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. T.D. 7,021 ft.; D.P. stk.; P.B. to 5,000 ft.; to sdtrk.

Amerada Pet. Corp. No. 4 State, sec. 13-15s-20e. Top salt 9,909 ft.; T.D. 9,914 ft.; P.B. 9,465 ft.; perf. csg. 9,453-63 ft.; I.P. 186 bbls. dist. per day; ¼-in. ck.

Amerada Pet. Corp. No. 2 St. Charles Ld. Co., sec. 13-15s-20e. T.D. 8,500 ft.; 9⅝-in. csg. 8,518 ft.; drlg. sh. 8,780 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 4 State-Terrebonne Bay, Sec. 19-23s-20e. Loc.

Texas Co. No. 29 State, sec. 17-23s-20e. Rig.

Texas Co. No. 53 State, Sec. 18-23s-20e. Drlg. sd.&shlls. 3,080 ft.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. T.D. 5,786 ft.; 7-in. csg. 5,323 ft.; tstd. S.W.; P.B. to sidetrack; T.D. 2,959 ft.; flwd. oil and sanded up; S.D.

Burton-Sutton Oil Co. No. 25 School Ld., Sec. 16-14s-13w. T.D. 7,960 ft.; abd.

Magnolia Pet. Co. No. 22 Cameron Meadows, sec. 21-14s-13w. 9⅝-in. csg. 4,242 ft.; T.D. 6,367 ft.; P.B. 3,830 ft.; perf. csg. 3,777-97 ft.; flwd. 80 bbls. fluid, 80% S.W.; killed well; perf. csg. 3,782-90 ft.; W.O.C.

Magnolia Pet. Co. No. 23 Cameron Meadows, sec. 21-14s-13w. Drk.

Charenton—St. Mary Parish

Kinsley Oil, Inc., No. 2 Hertel, sec. 21-13s-9e. Loc.

Pan American Prod. Co. No. 9 Laws Realty Co., sec. 31-13s-10e. T.D. 7,209 ft.; P.B. 4,000 ft.; drlg. sh. 4,811 ft.

Pan American Prod. Co. No. 9 Veeder, Sec. 11-13s-9e. T.D. 1,841 ft.; 7-in. csg. 1,830 ft.; tstg.

Creole—Cameron Parish

Superior Oil Co.-Pure Oil Co. No. 3 State-Gulf of Mexico. T.D. 2,458 ft.; S.D. acct. of storm.

Darrow—Ascension Parish

Darrow Oil Co. No. 1 Dennis, sec. 68-10s-2e. T.D. 5,750 ft., stky. sh., S.D.

Humble O. & R. Co. No. 1-B Community, Sec. 49-10s-2e. Drlg. sdy. sh. 7,790 ft.

Humble O. & R. Co. No. 14 Gumbel, Sec. 33-10s-2e. Drlg. sh. 5,458 ft.

Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. S.D. 2,523 ft.

Southern Drillers, Inc. (D. J. Simmons) No. 1 August Berteau, sec. 55-10s-2e. Drlg. sh. 7,622 ft.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. Driving piling.

Four Isle—Terrebonne Parish

Texas Co. No. 10 State, sec. 24-21s-16e. Drlg. sd. 8,123 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 1 Kuntz, sec. 40 17s-15e. Cg. 10,411 ft.

Shell Pet. Corp. No. 7 Pelican, T.D. 9,502 ft.; run 7-in. csg.; I.P. 988 B.P.D.; ¼-in. ck.

Garden Island—Plaquemines Parish

Texas Co. No. 28 State, sec. 100-23s-38e. Drlg. sh. 5,829 ft.

Grand Bay—Plaquemines Parish

Gulf Ref. Co. No. 2 Grand Prairie Lve., sec. 48-20s-18e (1,320 ft. W of No. 1). Drlg. sh. 1,544 ft.

Gulf Ref. Co. No. 1 State-QQ, Sec. 6-20s-19e. Loc.

Hackberry—Cameron Parish

Berry Oil Corp. No. 1 Cora E. Lyons, sec. 28-12s-10w (West Hackberry). T.D. 3,535 ft.; run 7-in. csg.

Darryl Davis No. 1 Bickford, sec. 29-12s-10w. T.D. 2,873 ft.; top sh., L., and brkn. cap; S.O. 2,792 ft.; 5-in. csg. 2,778 ft.; T.D. 2,873 ft.; tstd.; S.D.

Gulf Oil Corp. No. 1 Noble, sec. 22-12-10w. T.D. 3,201 ft.; P.B. 2,830 ft.; W. O.C.; to sdtrk. jnk.; fsg.; P.B. 2,830 ft.; trying to sdtrk.; stk. D.S.; fsg.

Stanolind O. & G. Co. No. 1 Carter, sec. 22-12s-10w. R.U.

Stanolind O. & G. Co. No. 1 Dorisse Kough, sec. 28-12s-10w. T.D. 3,060 ft.; 7-in. csg. 3,046 ft.; W.O.S.R.

Superior Oil Co. No. 3 Benson Vincent, Sec. 30-12s-10w. T.D. 6,632 ft.; run 7-in. csg.

Texas Co. No. 24-B State, sec. 12s-9w. T.D. 8,052 ft.; sdtrkd.; drlg. sh.&L. 7,756 ft.

Union Sulphur Co. No. 7 Hanzen, sec. 13-12s-10w. Drk.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, sec. 37-17s-9e. Cg. sh.&L. 3,689 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1-A Roane Sugar Co., sec. 38-13s-9e. T.D. 10,645 ft.; milling to sdtrk. stk. D.P.; sdtrkd. 10,253 ft.; drlg. sh. 10,353 ft.

Jefferson Island—Iberia Parish

Texas Co. No. 1 State-Lake Peigneur Twp. 12s-5e. Top salt 3,642 ft.; base salt 3,741 ft.; drlg. sdy. L. 3,936 ft.

Jennings—Acadia Parish

Frank Bennett No. 1 Freeman & Carden, Sec. 45-9s-2w. Drlg. sh. 5,205 ft.

W. T. Burton No. 6 Roboria, sec. 41-9s-2w. T.D. 6,797 ft.; 7-in. csg. 6,721 ft.; fsg. tbg.

Cosmo Pet. Co. No. 1 Jennings-Clement, sec. 46-9s-2w. T.D. 3,552 ft.; sdtrkd.; T.D. 3,095 ft.; S.D.; high wtr.

Frio Oil Co. No. 2 Gulf fee, sec. 45-9s-2w (NW flank). 10¾-in. csg. 1,512 ft. drlg. sh.&L. 4,564 ft.

Frio Oil Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 6,687 ft.; P.B. 4,300 ft. T.D. 6,170 ft.; S.D.

Glassell & Glassell No. 5 Trushell, sec. 42-9s-2w. Drlg. lm. 6,912 ft.

Glassell & Glassell No. 6 Trushell, sec. 42-9s-2w. Drk.

Gulf Oil Corp. No. 40 Arnaudet, sec. 48-9s-2w. R.U.

Iles Pet. Corp. No. 2 Jennings-Heywood, sec. 41-9s-2w. 6-in. csg. 1,700 ft.; cg. sh. 2,040 ft.

L. & L. Oil Co. No. 1 Housierre-Latrielle, Sec. 47-9s-2w. T.D. 2,003 ft.; I.P. 145 bbls. pmpg.; 10% S.W.

W. S. Noble et al No. 1 Ed Prather, sec. 45-9s-2w. Cg. sh. 7,433 ft.

Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. T.D. 3,995 ft.; P. B. 1,774 ft.; tstd. S.W.; S.D.

Pet. Heat & Power Co. No. 2 Iowa-Jennings, sec. 45-9s-2w. T.D. 2,167 ft.; P. B. 1,595 ft.; 5½-in. csg. 1,585 ft.; S.D.

Shell Pet. Corp. No. 4 Community, sec. 40-9s-2w. Drlg. sd. 5,941 ft.

Stanolind O. & G. Co. No. 112 Crowley Oil & Mineral Co., sec. 48-9s-2w. T.D. 6,838 ft.; P.B. 4,890 ft.; to sdtrk.; drlg. sh.&L. 6,669 ft.

Superior Oil Co. No. 4 Clement, sec. 46-9s-2w. T.D. 6,546 ft.; 7-in. csg. 6,494 ft.

Superior Oil Co. No. 7 Jennings-Heywood, Sec. 41-9s-2w. Drlg. 500 ft.

Superior Oil Co. No. 13 Leckelt, sec. 42-9s-2w. T.D. 7,926 ft.; sdtrkd.; T.D. 7,612 ft.; 7-in. csg. 7,497 ft.; I.P. 568 B.P.D.; 14/64-in. ck.

Three Sands Oil Co. No. 1 Whisenhunt & Tyrell, sec. 46-9s-2w. Cmtd. 6-in. csg. 1,600 ft.; T.D. 1,855 ft.; I.P. 60 bbls. pmpg.

Victor Weisse No. 1 Clement, sec. 46-9s-2w. 6⅝-in. csg. 3,032 ft.; T.D. 3,255 ft.; fsg. for tbg.

Lafitte—Jefferson Parish

Carter-Perrin & Brian No. 1 Lucien Adams, Sec. 9-17s-24e. R.U.

Texas Co. No. 11 Lafitte, sec. 19-17s-24e. T.D. 10,106 ft., oil sd.; 7⅝-in. csg. 10,085 ft.; perf. csg. 9,998-10,022 ft.; I.P. 1,733 B.P.D.; ¾-in. ck.

Texas Co. No. 12 LaFitte, Sec. 20-17s-24e. Loc.

Texas Co. No. 3 Madison Realty Co., sec. 17-12s-24e. Drlg. sh. 9,660 ft.

Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. Drlg. sh.&L. 8,073 ft.

Texas Co. No. 10 Rigolet Cooperative Fur Co., Sec. 28-17s-24e. R.U.

Lake Barre—Terrebonne Parish

Texas Co. No. 16 State, sec. 32-21s-19e. T.D. 4,280 ft.; P.B. 2,734 ft.; sd. S.O.; top sd. 3,833 ft.; T.D. 4,173 ft.; P.B. 3,600 ft.; sdtrkd.; cg. sdy. sh. 4,140 ft.

Texas Co. No. 42 State-Lake, sec. 40-21s-19e. Drlg. sdy. sh. 9,647 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 21 State, sec. 8-23s-18e. T.D. 6,058 ft.; P.B. and sdtrkd.; T.D. 5,761 ft.; P.B. 5,536 ft.; to sdtrk.

Lake Hermitage—Plaquemines Parish

Gulf Ref. Co. No. 8 Lafourche, sec. 11-18s-25e. Drlg. hd. sh. 2,664 ft.; 10¾-in. csg. 967 ft.; drlg. sd. 3,709 ft.

Leesville—Lafourche Parish

Wm. Helis No. 1-A City of New Orleans, Sec. 35-21s-22e. Drlg. sdy. sh. 7,836 ft.

Texas Co. No. 7 Leeville, sec. 27-21s-22e. R.U.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Robert Ver-

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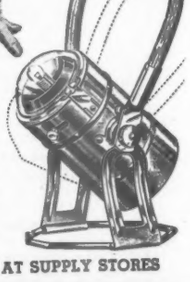

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ret, sec. 32-19s-19e. Drlg. hd. sd.&gvl. 1,876 ft.; 20-in. csg. 296 ft.; 13⅜-in. csg. 3,164 ft.; drlg. sd. 7,780 ft.

Lockport—Calcasieu Parish

La. Crusader Oil Co. No. 1 Milam Stieker, sec. 6-10s-9w. Drlg. sh. 1,828 ft.; 10¾-in. csg. 1,028 ft.; drlg. S.W. sd. 7,876 ft.

Magnolia Pet. Co. No. 23 Miller, sec. 9-10s-9w. T.D. 7,952 ft.; D.S. stk.; drk. blew down.

T. C. Markley No. 1 Farquhar (offset Continental No. 1 J. H. Moss). R.U.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 5 State-Lake Long, sec. 64-17s-19e. Drlg. sh. 2,764 ft.; 13⅜-in. csg. 2,761 ft.; drlg. sh. 7,447 ft.

New Iberia—Iberia Parish

H. Fotiades No. 5 Gulf Ld., sec. 25-12s-1e. T.D. 4,957 ft.; 7-in. csg. 4,700 ft.; P.B. 4,622 ft.; perf. csg. 4,590-4,620 ft.; swbg.; will not flow.

H. Fotiades No. 7 Gulf Ld., sec. 25-12s-7e. Drk.

Wm. Helis No. 6 Schwing, sec. 56-12s-7e. Salt 3,949-50 ft.; P.B. 1,850 ft.; T.D. 3,938 ft.; trying to sdtrk. at 3,872 ft.

Texas Co. No. 2 Burke, sec. 56-12s-7e T.D. 7,076 ft., salt; P.B. 4,350 ft.; sidetracking 4,830 ft.; T.D. 5,804 ft.; 7-in. csg. 5,754 ft.; I.P. 643 B.P.D.; ¼-in. ck.

Texas Co. No. 4 J. P. Drake, sec. 26-12s-7e. Drk.; (cor.).

Texas Co. No. 2 Clemente Hebert, sec. 25-12s-7e. Drk.

Texas Co. No 2 Schwing, sec. 71-12s-7e Drlg. sdy. sh.&L. 4,821 ft.

Texas Co. No. 4 Grelino, sec. 25-12s-7e T.D. 6,181 ft.; 7-in. csg. 6,100 ft.; P.B. 6,159 ft.; I.P. 741 B.P.D.; ¼-in. ck.

North Crowley—Acadia Parish

Humble O. &. R. Co. No. 1 H. J. Thevis, sec. 34-8s-1e. Loc.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 3 Garland, sec. 4-6s-5e. Drk.

Pan American Prod. Co. No. 1 Rene Nezal. Drk.

Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e. S.D. 1,565 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 36 Orleans Lve. Bd., Sec. 14-18s-15e. Drlg. sd. 9,225 ft.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 1-A Orleans Levee Bd., Sec. 18-19s-17e. Drlg. sd. 7,138 ft.

Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. T.D. 11,014 ft.; P.B. 10,978 ft.; tstd. S.W.; P.B. 10,780 ft.; perf. csg. 10,745-60 ft.; swbd. gas; pulling tbg.

Gulf Ref. Co. No. 5 State, sec. 17-19s-17e. Loc.

Gulf Ref. Co. No. 6 State, sec. 17-19s-17e. Driving piling.

Raceland—Lafourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; T.D. 11,312 ft.; 7-in. csg. 11,312 ft.; S.D.

Amerada Pet. Corp. No. 2 South Coast Corp., Sec. 35-15s-19e. Drlg. sh. 11,924 ft.

Tide Water Oil Co. No. 1-A South Corp., sec. 34-15s-19e. R.U.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 13 United Ld. Co., Sec. 15-10s-4e. Drlg. sd.&cly. 152 ft.

Sorrento Pet. Corp. No 2 White, sec. 22-10s-4e. 16-in. csg. 100 ft.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Joe Sturdivant, Sec. 36-10s-4w. S.D. 11,039 ft.

Union Sulphur Co. No. 2 T. R. S. Farm sec. 23-10s-4w. Sh. 9,736 ft.; cmtd. 7-in. csg. 8,888 ft.; drlg. sh. 10,047 ft.

Starks—Calcasieu Parish

Lutcher-Moore Co. No. 5 fee, sec. 19-9s-12w. T.D. 4,153 ft., salt; P.B. 3,987 ft.; 7-in. csg. 3,827 ft.; bailed dry; S.D. 3,857 ft.

J. R. Turnbull No. 1 Industrial Lbr. Co., sec. 19-9s-12w. Top salt 2,270 ft.; S.D. 2,273 ft.; P.B. 1,150 ft.; S.D.

Timbalier Bay—Lafourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23-21e. T.D. 7,373 ft.; T.D. sdtrkd. hole 6,231 ft.; fsg.; P.B. and sdtrkd. 3,501 ft.; T.D. 6,545 ft.; fsg. for drill bit.

Valentine—Lafourche Parish

Wm. Helis No. 3 Valentine Sugars, Inc., Sec. 2-17s-30e. Loc.

Pan American Prod. Co. No. 1-A Community, sec. 99-17s-20e. T.D. 8,094 ft. abd.

Pan American Prod. Co. No. 2-B Community, sec. 58-17s-20e. T.D. 10,055 ft.; P.B. 8,880 ft.; top sd. and sdy. sh. S.O. 9,300 ft.; 7-min. D.S.T. 9,290-9,325 ft. tstd. 33 stands of P.L.O.; 7-in. csg. 9,290 ft.

Pan American Prod. Co. No. 1 A. Robichaux, sec. 3-17s-20e. T.D. 5,889 ft.; stk. D.S.; P.B. and sdtrk.; drlg. sdy. sh. 4,748 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 1 Bureas Lve. Bd., Sec. 23-21s-30e. Drlg. sh. 2,475 ft.

Villa Platte—Evangeline Parish

Amerada Pet. Corp. No. 2 Fornier, sec. 44-35-2e. T.D. 9,103 ft.; oil sd. 9,043-94 ft.; I.P. 613 bbls. in 22 hrs.; ¼-in. ck.

Continental Oil Co. No. 1 Corell, Sec. 44-3s-2e. Drlg. sh. 5,317 ft.

Continental Oil Co. No. 2 La. Ld. & Imp. Co., Sec. 46-3s-2e. Drk.

Continental Oil Co. No. 2 Opelousas, St. Landry, Sec. 44-3s-2e. Drlg. sh. 5,015 ft.

Continental Oil Co. No. 2 Piere McDaniel, Sec. 44-3s-2e. Drlg. sh. 8,021 ft.

J. R. Hughes Oil Co. No. 1 J. E. Ortego, Sec. 36-3s-2e. Drlg. sh. 7,074 ft.

Vinton—Calcasieu Parish

J. B. Reddich No. 3 Vincent, sec. 34-10s-12w. Cg. sh. 3,300 ft.

Welsh—Jeff Davis Parish

Stanolind O. & G. Co. No. 1 Pousson. Sec. 28-9s-5w. Drlg. sh. 6,650 ft.

West Gueydan—Vermilion Parish

Magnolia Pet. Co. No. 1 Reese, sec. 5-12s-2w. T.D. 3,197 ft.; 13⅜-in. csg. 3,114 ft.; drlg. sd. 5,462 ft.

Pure Oil Co. No. 1 Vermilion Irrig. Co., sec. 41-12s-2w. R.U.R.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 O. Miller, sec. 7-9s-5w. T.D. 7,232 ft.; S.D.

S. LOUISIANA WILDCATS

Acadia Parish

Atlantic Ref. Co. No. 1 Klumpp, sec. 12-7s-2w. Drk.

Avoyelles Parish

G. C. Koch et al No. 1 Kelone, sec. 21-2n-3e. 10¾-in. csg. 987 ft.; S.D. 6,021 ft.; prep. to resume drlg.

Magnolia Pet. Co. No. 1 W. G. Bowden, Sec. 7-2s-4e. Bldg. drk.

Calcasieu Parish

Sun Oil Co. No. 2 Lutcher-Moore, sec. 12-8s-13w. Bldg. drk.

Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. 15½-in. csg. 46 ft.; S.D. 641 ft.; T.A.

Cameron Parish

Federal Roy. Co. No. 1 State-Calcasieu Lake, sec. 34-13s-8w. Driving piling.

Humble O. & R. Co. No. 2 K. B. Hanzen, 466 ft. S and E, NW cor. SW¼ sec. 9-12s-6w. T.D. 9,782 ft.; S.D.

Pure Oil Co. No. 2 Calcasieu Natl. Bnk., sec. 18-12s-4w (½ mi. N of No. 1). Drk.

Union Sulphur Co. No. 3 Miami Corp., Sec. 33-12s-8w. (Willow Lake area). Spd. and S.D.

Concordia Parish

Benedum & McCormick No. 1 L. P. Allen, sec. 35-5n-8e. R.U.

Jeff Davis Parish

Union Sulphur Co. No. 1 H. J. Liggett, Sec. 36-7s-5w. T.D. 8,392 ft.; abd.

Jefferson Parish

Julius Szodomka No. 1 Carroll, sec. 12-12s-11e. T.D. 5,230 ft.; S.D.

Lafourche Parish

Sun Oil Co. No. 1 Dilbert Stark, Brown Cypress Co., Sec. 70-15s-15e. Drlg. sh. 6,910 ft.

Texas Co. No. 1 La Terre, sec. 1-20s-21e. T.D. 8,898 ft.; 9⅝-in. csg. 8,898 ft.

Orleans Parish

W. T. Burton No. 2-B Faubourg de Montluzin, Sec. 1-10s-13e. Drlg. sh. 2,245 ft.

W. T. Burton No. 1-B R. E. E. de Montluzin, sec. 1-10s-13e. Drk.

W. T. Burton No. 1 State-Lake Pontchartrain, Twp. 10s-13e. Drlg. L. 7,617 ft.

Rapides Parish

J. J. Farrell No. 1 W. P. Aertker, sec. 16-4n-1e. Drk.

E. F. Kalb et al No. 1 Lee Lbr. Co., sec. 9-5n-3e. S.D. 140 ft.

St. James Parish

Continental Oil Co. No. 1 Colonial Sugars Co., Sec. 46-12s-5e. Drlg. shaley sd. 8,644 ft.

St. John the Baptist Parish

Shell Pet. Corp. No. 1 Godchaux, sec. 97-11s-7e. Drlg. sh. 8,750 ft.

St. Landry Parish

Herton Oil Co. et al No. 1 Thistlephlite Lbr. Co., Sec. 60-4s-4e. R.U.

St. Martin Parish

Shell Pet. Corp. No. 1 Jeanerette Lbr. Co., Sec. 14s-12e. T.D. 10,550 ft.; S.D.; W.O.

Texas Co. No. 6 State Lake Mongoulois, Sec. 10-10s-9e. Drlg. S.W. sd. 6,800 ft.

Texas Co. No. 11 St. Martin Ld. Co. Sec. 21-8s-7e. S.D. 8,916 ft.; salt; top salt 8,904 ft.

Terrebonne Parish

Fohs Oil Co. No. 1 State, sec. 41-19s-19e. T.D. 13,409 ft.; 7-in. csg. 12,215 ft.; perf. csg. 11,172-78 ft.; I.P. 53 bbls. 50-grav. dist.; 10/64-in. ck.

Shell Pet. Corp. No. 1 Peters, sec. 73-18s-18e. Cg. sh. 9,556 ft.

Shell Pet. Corp. No. 1 Realty Operators, sec. 10-18s-16e. 13⅜-in. csg. 2,461 ft.; T.D. 11,208 ft.; abd.

Texas Co. No. 1 State, Caillou Island Bay, Twp. 23s-14e. Cd. sd. S.O. 4,390-95 ft.; top salt 4,922 ft.; T.D. 4,924 ft.; salt; abd.

TEXAS

Week Ending August 20

GULF COAST FIELDS

Danbury—Brazoria County

Rowan Drlg. Co.-Shell Pet. Corp. No. 7 Thos. Jamison, H. Austin Sur. No. 6. 10¾-in. csg. 188 ft.; T.D. 1,977 ft.; oil sd.; top sd. 1,957 ft.; recvd. 800 ft. oil; D.S.T. 1,957-77 ft.; completing.

Lockridge—Brazoria County

Shell Pet. Corp. No. 5-B Ramsey State farm, J. W. Hall Sur. T.D. 6,365 ft.; W.O.C.; P.B. 6,336 ft.; made size, job 6,342-52 ft.; P.B. 6,336 ft.; W.O.C.

Hastings Field—Brazoria County

Humble O. & R. Co. No. 9 J. E. Alexander, H.T.&B. Sur. 28. Drlg. sh. 1,350 ft.

Stanolind O. & G. Co. No. 1-B Moore, I.&G.N. Sur. No. 22. Loc.

Stanolind O. & G. Co. No. 6 Artie Remely, H.T.&B. Sur. No. 28. Drk.

Stanolind O. & G. Co. No. 7 Remley, H. T.&B. Sur. No. 28. Loc.

Stanolind O. & G. Co. No. 2-C Cecil Brown, W. H. Snyder Sur. Drk.

Stanolind O. & G. Co. No. 7 J. F. Law, H.T.&B. Sur. No. 36. T.D. 6,140 ft.; 7-in. csg. 6,128 ft.

Stanolind O. & G. Co. No. 2 P. McDonald, Mary Sloan Sur. Drk.

Stanolind O. & G. Co. No. 15 Sneed, A. C.H.&B. Sur. Drk.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 3 Armstrong Plantation, Polley & Chance Sur. R.U.

Harrison & Abercrombie No. 1 Chenault, C. Breen Sur. Drlg. sh. 6,086 ft.

Harrison & Abercrombie No. 1 Fisher, and Larsen, C. Breen Sur. Loc.

Harrison & Abercrombie No. 1 R. D. McDonald, C. Breen Sur. Loc.

Harrison & Abercrombie No. 1 C. Larsen, Chas. Breen Sur. Cg. 10,227 ft.

Harrison & Abercrombie No. 1 Sadler & Larsen, C. Breen Sur. T.D. 10,224 ft.; run csg.

Stratton Ridge—Brazoria County

Sterling O. & R. Co. No. 1 J. C. Kramer, T. W. Grayson Sur. T.D. 3,695 ft.; P.B. 3,200 ft.; W.O.C.; T.D. 3,797 ft.; fsg.

West Columbia—Brazoria County

Mike Hogg No. 3 fee, G. Tennille Sur. Drlg. sh. 4,748 ft.

Texas Co. No. 25 W. H. Abrams, G. Tennille Sur. T.D. 4,881 ft.; P.B. to sdtrk.; drlg. sh. 4,887 ft.

Texas Co. No. 26 Abrams, G. Tennille Sur. Drlg. sh. 3,468 ft.

Texas Co. No. 27 W. H. Abrams, G. Tennille Sur. Drlg. sh. 1,512 ft.

Texas Co.-Sterling O. & R. Co. No. 8 Phillips, Geo. Tennille Sur. Drlg. sd. 1,428 ft.

Cotton Lake—Chambers County

J. R. Turnbull No. 1 Casey, S. Barrow Sur. T.D. 6,539 ft.; 5½-in. csg. 6,525 ft.; perf. csg. 6,460-70 ft. and 6,480-92 ft.; flwd. oil and S.W.; reperf. csg. 6,465-95 ft.; flwd. oil; well went dead; perf. csg. 6,390-6,410 ft.; pulled collapsed csg.; retesting.

Seabreeze—Chambers County

Sun Oil Co. No. 3 Broussard-Hebert, T. &N.O. Sur., sec. 127. Cd. oil sd. 5,461-84 ft.; flwd. 28 B.F.P.D.; ¼-in. ck.; 3% S.W.

Sun Oil Co. No. 1 Tate, H.T.&B.R.R. Sur. Loc.

Greens Lake—Galveston County

Sun Oil Co. No. 2 Houston Farm Dev. Co., D. Buckley Sur. T.D. 7,505 ft.; cmtd. csg.; W.O.C.

Hitchcock—Galveston County

N. W. Hunter No. 1 J. D. Hughes, A. Burke Sur. Drlg. sd. 3,664 ft.

Maco Stewart No. 4 fee, J. Spillman Sur. R.U.

Bammel—Harris County

H. M. Lawrence and Geo. Lawrence No. 1 C. Ehrkardt, H. Simmons Sur. Drk.

Clear Lake—Harris County

West Prod. Co. No. 4 West fee, J. B. McKinstry Sur. Drlg. sh. 5,630 ft.

Clinton—Harris County

S. G. Harrison No. 1 Lafferty, J. Brown Sur. Drlg. sh. 4,502 ft.

Stanolind O. & G. Co. No. 1 C. J. Caywood, Reels & Trobough Sur. Drk.

Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk

Stanolind O. & G. Co. No. 2 Paul Weber, Reels & Trobough Sur. Loc.

Sun Oil Co. No. 1 H. C. Oates, Reels & Trobough Sur. Drlg. sh. 3,964 ft.

Eureka—Harris County

Jack Frazier No. 2 Emma Helberg, J. Reinerman Sur. Drk.

Jack Frazier No. 1 Lackner, H. Reinerman Sur. Cg. sh. 7,696 ft.

Jack Frazier No. 4 Vollmer-Neiman, J. Reinerman Sur. T.D. 7,782 ft.; perf. csg. 7,720-35 ft.; flwg. gas.

Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. R.U.

Means & McGee No. 1-C Lackner, H. Reinerman Sur. Cg. sd. 7,710 ft.

Tide Water Asso. Oil Co. No. 2-A Lackner, J. Reinerman Sur. T.D. 7,760 ft.; cmtd. csg. on bttm.; tstd. S.W. 7,720-35 ft.; fsg.

Tide Water Asso. Oil Co. No. 1-B Laura Lackner, H. Reinerman Sur. T.D. 7,725 ft.; run csg.

Fairbanks—Harris County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Berryman and Emmott, J. Waugh Sur. T.D. 6,844 ft.; 5½-in. csg. 6,843 ft.

Amerada-Stanolind O. & G. Co. No. 1 Adell, J. Clarkson Sur. R.U.

Amerada-Stanolind O. & G. Co. No. 3 M. E. Cougat, Geo. Ayers Sur. T.D. 6,858 ft.; 5½-in. csg. 6,857 ft.

Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 Marietta, G. Williams Sur. Cg. sd.&sh. 6,810 ft.

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 3 Smith, J. Waugh Sur. Loc.

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 2 Silberg, Geo. Ayers Sur. Drk.

Carroll Oil Co. No. 1 Ralph Johnston, J. N. Dement Sur. T.D. 6,864 ft.; perf. csg. 6,839-43 ft.; would not flow; S.D.

Gem Oil Co. No. 5 Reid, G. Ayers Sur. T.D. 6,853 ft.; 5½-in. csg. on bttm.; perf. csg. 6,846-51 ft.; tstg.

Gem Oil Co. No. 6 Reid, Geo. Ayers Sur. Drk.

E. M. Hailey No. 1 Albert Brown, J. Clarkson Sur. Loc.

Housch-Thompson No. 1 Fisher Est., T. Hogan Sur. Drlg. sh. 3,937 ft.

Mortex Oil Co. No. 1 W. R. Reid, G. Ayers Sur. Drlg. sh. 6,087 ft.

Showers & Moncrief No. 1-B B. W. Reid, J. Waugh Sur. T.D. 6,848 ft.; perf. csg. 6,841-46 ft.; tstg.

Skelly Oil Co. No. 2 J. H. Emmott, J. Waugh Sur. T.D. 6,840 ft.; run csg.

Skelly Oil Co. No. 3 J. H. Emmott, J. Waugh Sur. Loc.

Smith & Ownby No. 3-B Gibson, Geo. Ayers Sur. T.D. 6,862 ft.; 5½-in. csg. 6,860 ft.

Stanolind O. & G. Co. No. 1 Fritz Look, S. Lewis Sur. Cg. 7,269 ft.

Williams and Thompson No. 1 A. R. Kraemer. T.D. 6,854 ft.; 5½-in. csg. 6,854 ft.

Windsor Oil Co. No. 3 O. E. Parker, J. Waugh Sur. Loc.

Windsor Oil Co. No. 4 O. Parker, J. Waugh Sur. T.D. 6,839 ft.; 5½-in. csg. 6,839 ft.

Windsor Oil Co. No. 1-B C. D. Ley, Geo. Ayers Sur. Drk.

Friendswood—Harris County

Humble O. & R. Co. No. 21 L. S. Beamer, T. Choate Sur. Drlg. sh. 1,050 ft.

Humble O. & R. Co. No. 12 E. A. Grey, Perry & Austin Sur. Drlg. 600 ft.

Humble O. & R. Co. No. 3 Hermann Hospital, T. Choate Sur. Drlg. sh. 2,114 ft.

Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.

Humble O. & R. Co. No. 3 Settegast, T. Choate Sur. Drk.

Humble O. & R. Co. No. 1 Tinkler, W. D. C. Hall Sur. T.D. 6,042 ft.; run csg.

Humble O. & R. Co. No. 1 E. E. Watson Drk.

Humble O. & R. Co. No. 1 C. E. Wood, W. C. D. Hall Sur. Drk.

Cordele—Jackson County

H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 2 McFaddin, S. A. Pace Sur. T.D. 8,198 ft., salt; top salt 8,156 ft.; 5-in. csg. 5,659 ft.; perf. 5,548-52 ft.; P.B. 3,895 ft.; perf. csg. 3,880-90 ft.; P.B. 3,801 ft.; W.O.C.

Cheek—Jefferson County

Shell Pet. Corp. No. 1 Ed. Pleasant, C. Hildebrand Sur. T.D. 7,726 ft.; tstd. oil on D.S.T. 7,711-21 ft.; P.B. 7,725 ft.; flwg. 36 bbls. dist. daily through ⅞-in. ck.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 5 J. H. Phelan A. Stivers Sur. T.D. 8,319 ft.; flwg. dist. through 17/64-in. ck.

Spindletop—Jefferson County

Unity Oil Co. No. 1 Greer Noll, J. A. Veatch Sur., Blk. 7, Spindletop Hgts. Subd. (NE flank wildcat). Drk.

Hardin—Liberty County

Geo. Echols-Shell Pet. Corp. No. 1 J. H. Cessna, H. B. Johnston Sur. T.D. 7,656 ft.; perf. 5½-in. csg. 7,649-52 ft.; flwd. S.W.; S.I.

Humble O. & R. Co. No. 1 M. H. Johnson, H. B. Johnston Sur. T.D. 7,700 ft.; 5½-in. csg. on bttm.

Humble O. & R. Co. No. 3 W. S. Partlow, H. B. Johnston Sur. R.U.

Shell Pet. Corp. No. 3 J. H. Cessna, H. B. Johnston Sur. P.B. 5,219 ft.; to sdtrk.

Shell Pet. Corp. No. 4-A J. H. Cessna, H. B. Johnson Sur. Drk.

Tidewater Asso. Oil Co. No. 2-A Cessna, A. B. Hardin Sur. T.D. 7,655 ft.; 5½-in. csg. 7,648 ft.

Woodley Pet. Co. No. 1 Emma Davis et al, A. B. Hardin Sur. Drlg. sh. 5,029 ft.

Woodley Pet. Co. No. 2 Emma Davis et al, A. B. Hardin Sur. Spd.

McCrosky—Matagorda County

Pierce Est. No. 4-A Pierce. T.D. 6,626 ft.; 5½-in. csg. 6,621 ft.; flwd. 103 bbls. in 12 hrs.; ¼-in. ck.; died; swbd. oil and S.W.; P.B.

Bay City—Matagorda County

Atlantic Ref. Co. No. 1 Gola, E. Hall Sur. T.D. 9,759 ft.; 7-in. csg. 8,212 ft. perf. csg. 8,130-35 ft.; flwd. 17 B.P. H.; some S.W.; ¼-in. ck.

Hamman Expl. Co. No. 1 C. W. Badouh, E. Hall Sur. Drlg. sdy. sh. 9,130 ft.

Hamman Explm. Co. No. 2 Badouh, E. Hall Sur. Loc.

Hamman Explm. Co. No. 3 Thompson, E. Hall Sur. Drlg. sh. 7,639 ft.

Segno—Polk County

Gulf Oil Corp. No. 3 A. Ragan, I.&G.N. Sur., sec. 15. Drlg. sh. 5,530 ft.

Gulf Oil Corp. No. 12 Wing. Drlg. sd. 7,320 ft.

Humble O. & R. Co. No. 9-B Kirby, M. Victor Sur. Drlg. sh. 7,550 ft.

Spurger—Tyler County

Republic Prod. Co.-Houston Oil Co. No 11 Hurd fee, N. Hurd Sur. T.D. 7,750 ft.; 7-in. csg. on bttm.

Magnet—Wharton County

Gray & Wolf No. 1 State, Colo. River Sur. 10¾-in. csg. 1,160 ft.; drlg. sh. 3,020 ft.

Withers—Wharton County

Texas Co. No. 50-C Pierce Est., John Caldwell Sur. Drlg. sh. 4,210 ft.

GULF COAST WILDCATS

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.

Glenn McCarthy No. 1 G. C. Street, D. H. M. Hunter Sur. Drlg. sh. 3,212 ft.

W. C. Neville et al No. 1 Houston Farms Dev. Co., Perry & Austin Sur. 10¾-in. csg. 1,170 ft.; drlg. sh.&L. 6,715 ft.

Texas Co. No. 5 Freeport Sulphur Co., H. Burt Sur. Drlg. sh. in sdtrkd. hole 3,712 ft.

Burleson County

Peerless O. & G. Co. No. 1 G.C.&S.F. fee, James Lastley Sur. S.D. 1,200 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

Lavaca County

Crosby Drlg. Co. No. 1 Bertha Graf, Sublime area. Spd.

Fort Bend County

Henry C. Adams No. 1 Sury, H.&T.C.R. R. Sur., Sec. 48 (Needville). T.D. 6,510 ft.; abd.

Galveston County

Sun Oil Co. No. 1 Cade, A. Dickinson. T.D. 8,120 ft., sh.; cmtd. 7-in. csg. 8,750 ft.; (protection string); D.S. stk. sdtrkd. hole 7,341 ft.; T.D. 8,250 ft.

Harris County

H. H. Givens No. 2 F. K. Adone, David Middleton Sur. Drk.

Humble O. & R. Co. No. 1-A Keeler, W. Whitlock Sur. Loc.

Jackson County

Magnolia Pet. Co. No. 3-A West Rnch., Ramon Musquez Sur. 13⅜-in. csg. 1,346 ft.; T.D. 5,086 ft.; recvd. 420 ft. oil; D.S.T. 5,078-86 ft.; run csg.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two: S.D.

Humble O. & R. Co. No. 6 McFaddin State "B," 1,980 ft. NW of No. 1 State Gulf of Mexico. T.D. 2,134 ft.; abd.

Liberty County

John G. Mayo, Inc., No. 1 M. E. Roberts, J. F. DeRumayor Sur. R.U.

Wallace & Hargrove et al No. 1 J. C. League, M. DeLos Santos Sur. Drlg. sh. 2,110 ft.

Texas Co. No. 1 Paige, James Hanney Sur. T.D. 8,050 ft.; abd.

Madison County

W. E. Holleman, Tr., No. 1 D. C. Cannon Hrs., NW of Madisonville. Drk.

Matagorda County

Glenn H. McCarthy No. 1 Nancy Moffett et al, Susan Perkins Sur. 10¾-in. csg. 2,405 ft.; drlg. sh. 3,590 ft.

Ohio Oil Co. No. 1 W. D. Cornelius, P. C. Yarborough Sur. Drlg. sh. 2,293 ft.

Montgomery County

Deep South Pet. Corp. No. 1 Foster Lbr. Co., Preyor Bryan Sur. 10¾-in. csg. 700 ft.; drlg. sh. 986 ft.

David D. MacDaniel No. 1 J. C. Fleming, D. M. Gaheen Sur. R.U.

J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. S.D. 380 ft.

W. L. Todd et al No. 1 I. L. Martin, Z. Landrum Sur. R.U.

Newton County

Republic Prod. Co. No. 1 Sabine Tram, Isaac Garner Sur. (NW Starks Prospect). Drk.

Polk County

Jack Frazier No. 1 S. H. Bergman, A. Viesea Sur. (3 mi. W of Goodrich). 10¾-in. csg.; T.D. 4,211 ft.; abd.

Washington County

Speed Oil Co. et al No. 1 August Makowsky, D. McIntyre Sur. R.U.

Wharton County

Humble O. & R. Co. No. 1 Worington, S. F. Austin Sur. Drlg. sh. 7,205 ft.

Albert Plummer No. 1 Mrs. Corbett, Kuykendall Sur. T.D. 5,966 ft.; S.D.

S. W. TEXAS WILDCATS

Atascosa County

Mason Altgelt No. 1 J. G. Gibson, Francisco De La Garza Sur. Drlg. 2,610 ft.

G. C. Richardson No. 1 Fischer, A.B.& M. Sur. No. 1013. Sd. 844-55 ft.; W. O.C.; no report.

Western Gulf Prod. Co. No. 2 Vanegas, Francisco De La Garza Sur. Cd. sat. serpt. 2,732-43 ft.; run csg.

Bartrop County

R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. S.D. 1,725 ft.

Paul Texas and Ashby No. 1 J. T. Grizzard, Andrew Graham Sur. T.D. 4,700 ft.

Bee County

Atlantic Ref. Co. No. 1 Courtney, Geo. Kerr Sur. T.D. 3,660 ft., sd.; rmg. to make D.S.T.

R. B. Swiger et al No. 1 R. B. McKinney. 10¾-in. csg. 102 ft.; drlg. 3,415 ft.

Bexar County

Frank Gilpin, Jr., No. 1 Nieman, Juan Montes Sur. S.D. 40 ft.

Nami Herman No. 1 W. F. Fields, A. Bustillos Sur. T.D. 737 ft.; 5⅛-in. csg. on bttm.; S.D.

Caldwell County

Banke Miller Oil Co. No. 1 Martindale, Hector McNeil Sur. T.D. 3,223 ft.; S.D.

Calhoun County

Hiawatha O. & G. Co. No. 2 J. J. Roemer, J. Ogsberry Sur. Drlg. sh. 6,338 ft.; (cor).

De Witt County

Marjo Oil Co. No. 1 W. D. McCurdy, John Hunt Sur. S.D. 150 ft.

Duval County

James Foster No. 1 Foster, B.S.&F. Sur. No. 268. S.D. 1,850 ft.

Frank Gravis No. 2 Schallert, Seale, Morris & Seale Sur. No. 255 (Palagana salt dome). Drlg. 1,350 ft.

Magnolia Pet. Co. No. 1 Duval County Ranch Co., C.C.S.D.&R.G.N.G. Sur. No. 83. Drlg. sh. 2,610 ft.

Joe Palmer No. 1 Gruy, S. G. Hays Hrs. Sur. Drlg. 1,380 ft.

E. J. Purl No. 1 Corkill, J. Poitevent Sur. Loc.

Rowan & Hope No. 1 Cuellar, sec. 69. (Tesoro field). T.D. 5,360 ft.; run csg. to test Pettus sd.

Standard Oil Co. of Texas No. 1. Dolores Garcia Sur. T.D. 6,317 ft.; 7-in. csg. on bttm.; cg. sdy. sh. 6,870 ft.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

Humble O. & R. Co. No. 1 Schley, Jos. Travalder Sur. No. 174. R.U.

G. E. Smith No. 1 San Antonio Joint Stock Ld. Bnk., G.B.&C.N.G.R.R. Sur. No. 1. T.D. 3,738 ft., oil sd.; run csg.

Goliad County

Jack Frazier and Bunte Prod. Co. No. 1 Taylor. T.D. 5,563 ft.; abd.

Sun Oil Co. No. 1 Lee Homer, John Payne Sur. Drlg. sh. 4,330 ft.

Guadalupe County

Banks-Miller Oil Co. No. 1 Union Central, R. G. Davis Sur. S.D. 2,167 ft.

A. D. King Rosenbrock, Vincente Duran Sur. Drlg. 431 ft.

H. G. Spiller No. 1 Allen, H. Cottle Sur. T.D. 2,409 ft.; abd.

Hidalgo County

R. E. Harding No. 1 Lynn, Juan Jose Hinojosa Sur. T.D. 7,300 ft.; perf. 5½-in. csg. 7,103-15 ft.; tstd. S.W.; perf. csg. 7,074-82 ft.; tstd. S.W.; sqzd. perf.; perf. csg. 5,970-74 ft.; flwg. dist. and drlg. mud; tstg.

Hidalgo Prod. Co. No. 1 Daskam Corp., Porc. 45, Blk. 34. Cg. sh. 4,087 ft.

Phillips Pet. Co. No. 1 Flores (deep test N of Samfordyce field). T.D. 5,860 ft.; cmtd. 7⅝-in. csg. 5,847 ft. (protection string). Drlg. sh. 7,005 ft.

Union Sulphur Co. No. 1 Am.-Rio Grande Ld. & Ir. Co. (Mercedes). Cmtd. 7-in. csg. 8,417 ft.; T.D. 9,618 ft.; 5½-in. lnr. set 8,369-9,618 ft.; drlg. plug.

Wheelock & Collins No. 1 Temple Lbr. Co., Lino Cavaos, Porc. 57-A. Drlg. sh. 5,640 ft.

Jim Hogg County

Humble O. & R. Co. No. 2 Kelsey Bass, San Rafel Sur. T.D. 3,482 ft.; 10¾-in. csg. 3,469 ft.

Jim Wells County

Blanco Oil Co.-Buchanan Prod. Co. No. 1 Rattan, Blk. 14, L. G. Collins Subd. T.D. 5,302 ft.; perf. csg. 5,273-5,300 ft. flwg. oil; no ga.

J. W. Cosner No. 1 C. B. Stillwell, Blk. 62, L. G. Collins Farm Trs. Cg. 5,227 ft.

H. M. Howell No. 1 E. A. Hawkins, San Diego de Abajo Sur. Sh. 1,041 ft.; 10¾-in. csg. 1,031 ft.; T.D. 6,870 ft.; abd.

H. H. Howell No. 1 Mosser, Blk. 97, L. G. Collins Subd. T.D. 7,280 ft.; run csg. to test sd. 4,790 ft.

H. H. Howell No. 1 Stillwell, Blk. 63, L. G. Collins Subd. Cg. 5,278 ft.

Humble O. & R. Co. No. 1 Wm. Adams, Marcellino Lopez Gr., Abst. No. 28 Cg. 5,801 ft.

Humble O. & R. Co. No. 1 John A. True, Los Presenos de Abajo Sur. Loc.

Magnolia Pet. Co. No. 1 Romano, V. de Garcia Las Animas Sola gr., 1,126 ft. E of discovery well. Spd.

Magnolia Pet. Co. No. 1 Martin, Ana Maria Vaco Gr. Drlg. 5,296 ft.

Shell Pet. Corp. No. 1 C. H. Von Blucher, Lucinda Best Sur. Cg. sh. 6,527 ft.

Transwestern Oil Corp. No. 1 B. H. Dunlap, Sur. 179-181 (1½ mi. SW East Premont field). 18⅝-in. csg. 485 ft.; drlg. sh. 3,815 ft.

Kendall County

Geo. Dorsey No. 1 Flanagan, J. Sweeney Sur. No. 12. S.D. 350 ft.

Millican and Norman No. 1 Werner, J. F. Torrey Sur. T.D. 747 ft.; run csg.

Kerr County

H. C. Starkey No. 1-A Saue, T.W.N.G R.R. Sur. S.D. 345 ft.

Kimble County

Phillips Pet. Co. No. 1 Mudge, C.C.S.D.& R.G.N.G.R.R. Sur. No. 9. Drlg. L. 1,979 ft.

Plateau Oil Co. No. 1 S. J. Davis, N. Mitchell Sur. No. 44. R.U.

Plateau Oil Co. No. 1 Hunger, J. Dujner Sur. Drlg. L. 1,056 ft.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr 68, Laguna Madre Bay, Lse. No. 528 Drlg. sh. 9,238 ft.

Lavaca County

A. C. McCord et al No. 1 Cora Russek, Blk. 33, J. C. Reynolds Sur. (S of Ezzell). Spd.

Midway Oil & Royalty Co. No. 1 Michaleik, S. H. Jack Sur. T.D. 814 ft.; run csg.

Lee County

Eleoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. T.D. 4,398 ft.; prep. to resume drlg.

Fred Pederson et al No. 1 Brown, David Hudson Sur. Drlg. 2,010 ft.

A. H. Tarver No. 1 J. W. Lawhon. Drlg. sh. 2,625 ft.; no report.

Live Oak County

J. K. Adair No. 1 Schultz Live Stock Co., Wm. J. Pierce Sur. 10¾-in. csg 20 ft.; S.D. 494 ft. for wtr.

Bailey et al No. 1 McDermott & Co., Mark Kelly Sur. T.D. 2,100 ft.; abd.

R. H. Feitner No. 1 Reed, I.&G.N. R.R. Sur. 15. R.U.

Hanna et al No. 2 West, C. O. Ragland Sur. S.D. 2,616 ft.

Holland Oil Co. No. 1 Wallace, Cameron Co. Sch. Ld. Sur. R.U. heavy rig.

N. P. Oil Co. No. 1 Griffith, J. Poitevent Sur. No. 49. S.D. 905 ft.

Richardson Pet. Co. No. 1 Reagan, Wm. O'Docherty Sur. Drlg. 640 ft.

Smith & McDannald No. 1 Rooney, Casa Blanca Gr. Spd.

V. G. Schimmel et al No. 1 Geo. West G. L. Haas Sur. T.D. 210 ft.

Wallace & Jones No. 1 Burrows, Eneas Smith Sur. Drlg. 565 ft.

McMullen County

W. T. Kirby No. 1 Chylek, J. M. Hernandez Sur. Drlg. 335 ft.

Red Bank Oil Co. No. 1 Nueces Ld. & Livestock, J. McGrain Sur. Spd.

Wm. Spice, Jr., No. 1 Edrington, A.B.& M. Sur. 57 (5 mi. E Loma Alto). Rig.

Maverick County

L. M. Lockhart No. 1 Ashbrook, W. J Phillips Sur. No. 83. Cg. L. 2,492 ft.

Wellington Oil Corp. No. 1-B Chittim, I. &G.N. Sur., Blk. 6. sec. 98. 14 mi. SE of Eagle Pass. Drlg. 1,230 ft.

Medina County

J. W. Cromwell No. 1 J. W. Tondre, I. J. Rogers Sur. T.D. 1,250 ft.; P.B. 1,080 ft.; cmtd. csg. 1,021 ft.; shot 1,024-80 ft.; bailing.

Geo. Hayes and Tarver No. 1 Mann, J. H. Isbell Sur. No. 10. S.D. 440 ft.

L. W. Stieren No. 1 Haegelin, Dolly Smitherman Sur. S.D. 335 ft.

Taylor & Pepper No. 1 Saathoff, Peter Eichorn Sur. T.D. 935 ft.; S.D.

Ziegler et al No. 1 Wiemers, F. Thurmm Sur. Drlg. 670 ft.

Milam County

Texedo Oil Co. No. 1 Paul Garves, C Robertson Sur. S.D. 1,170 ft.; C.O. set 7-in. csg. 1,167 ft.; S.D. 1,520 ft.

Nueces County

Union Prod. Co. No. 1 Minnie Brown (Aqua Dulce area). S.D. 10,741 ft.

Refugio County

I. J. Allen No. 1 Rooke, Aldrite Sur. O.W.D.D.; drlg. sh.&sd. 5,105 ft.

I. J. Allen No. 3 Rooke, Jose Miguel Aldrite and Jose Marie Aldrite Sur. (933 ft. SE of No. 2). Loc.

San Patricio County

Humble O. & R. Co. No. 1 B. G. Henry, 4th Addn., Taft Farm Lds., Blk. 8, Sec. 27. 2 mi. NE of Taft field. T.D. 5,950 ft.; abd.

Starr County

Hagan and Stewart Oil Co. et al No. 1 Salinas, Antonio Canales Salinas gr. Spd.

Magnolia Pet. Co. No. 1 Guerra, Santa Cruz gr. (LaReforma field), 1,900 ft. SW of discovery well). Drlg. 350 ft.

Sun Oil Co. No. 1 Lopez, N. Vela Sur., Porc. 82. Spd.

Sun Oil Co. No. 1 Smith, A. J. Smith Sur. Drlg. 3,418 ft.

W. W. Zimmerman et al No. 1 Starr Co. Cattle Co., Juan De La Garza, Porc 89. S.D. 2,370 ft.

Travis County

L. G. Priest No. 1 Mazock. J. M. Leavy Sur. No. 5. Drlg. 870 ft.

R. F. C. Oil Co. No. 1 Jones, Reuben Hornsby Sur. No. 17. T.D. 1,066 ft.; 5-in. csg. 1,009 ft.; tstg.

Webb County

W. R. Nicholson No. 1 fee, M. Valpe Sur. T.D. 3,507 ft.; will comp. as wtr. well.

J. W. O'Byrne No. 1 Lacey, Mary E. Wideman Sur. Drlg. sh. 600 ft.

Williamson County

F. J. Anderson No. 1 Teichelman Ab salam, Jett Sur. S.D. 900 ft.

H. H. Coffield No. 1 Poe, Harrison Owens Sur. Drlg. 600 ft.

Fritz Fuchs No. 1 Stiles, Jehu Bevil Sur. No. 56. S.D. 1,085 ft.

Wilson County

Stapper Oil Co. No. 1 J. McDaniel, L. Manchoca Sur. S.D. 3,008 ft.

Zapata County

Thompson & Lowe No. 1 Ramirez, Blk. 6 Doyle Subd. of Porc. 18. Drlg. 815 ft.; no report.

EAST TEXAS

(Border counties)

Bowie County

King Oil Corp. No. 1 Watts, Geo. Brinlee Sur. T.D. 4,574 ft.; prep. deepen.

Cass County

Harry Hanbury No. 1 Echols et al, SE cor. Echols tr., Wm. Mayes Sur. W.O. C. 5,987 ft.

Texarkla Oil Corp. No. 1 Mayo, Bryant Holmes Sur. Cg. 6,080 ft.

Texas Co. No. 2 Chatten Est., Wm. Myers Sur. Set 9⅝-in. csg. 2,175 ft.; drlg. 5,363 ft.; W.O.C. 5,935 ft.

Marion County—Rodessa

Ark.-La. Gas Co. No. 1 Bodgett, Allen Urquhart Sur. Set 10¾-in. csg. 1,007 ft.; drlg. 5,158 ft.

Ark.-La. Gas Co. No. 4 Holland, Hanks Sur. Cg. 6,058 ft.

Ark.-La. Gas Co. No. 1 Johnson, Alex. Johnson Sur. D.S.T. 5,984-6,018 ft.; ⅝-in. ck. bttm.; ½-in. ck. top; open 9 min. rec. est. 30,000,000 ft. gas; 11 jts. drlg. fluid; top 2 jts. mud and drlg. wtr. cut with gas; W.O.C. 6,154 ft.; cg. 6,114-34 ft.; G.&O.S.; tstg. 6,130-40 ft.

Ark.-La. Gas Co. No. 1 Walker, Humphries Sur. Drlg. 5,586 ft.

T. Bell et al No. 1 Moseley, D. Lane Sur. W.O.C. 2,522 ft.

Gulf Oil Corp. No. 3 Grubaugh, Coy Sur. Drlg. 4,583 ft.

Holcomb & Thomason No. 1-C Henderson, R. Bennington Sur. Drlg. 6,039 ft.

Phillips Pet. Co. No. 2 Beard, Bennington Sur. Drlg. 4,388 ft.

Phillips Pet. Co. No. 2 Benefield, J. Hanks Sur. Drlg. 5,560 ft.

Shell Pet. Corp. No. 3 Schluter, Wm. Smith Sur. Drlg. 5,083 ft.

Panola County

Texas Co. No. 1 Claude Adams, T. Cox Sur. Top lower Marine 7,792 ft.; drlg. 10,387 ft.

Sabine County

Hugo Allen No. 1 Bwoho, Isaac Low Sur. D.S. stk.; T.D. 5,044 ft.

Pet. Heat & Power Co. No. 1 Jasper State Bank, McDonald Sur. T.D. 2,506 ft., sd.; S.D.W.O.

Shelby County

Center Oil Co. No. 1 Windham, A. H. English Sur. T.D. 3,422 ft.; set 6⅝-in. csg. pmpd. 10 bbls. oil, 500 bbls. S.W.

W. A. Reddit No. 2 Pickering Lbr. Co., P. J. Loggins Sur. Set 7-in. csg. 2,920 ft.; T.D. 4,420 ft.; Woodbine sd. 2,905-10 ft.; flwg. in pits; arng. dpn.

WEST TEXAS WILDCATS

Andrews County

Fuhrman Pet. No. 1 G. O. Ashton, sec. 12, Blk. A-42, P.S.L. Sur. Drlg. 3,450 ft.

Olson Drlg. Co. No. 1 Lockhart-Brown, 5 mi. W of south end of Fuhrman pool. Tstg. on pmp. 4,780 ft.

Cochran County

Texas Co. No. 1 D. S. Wright, Lge. 115, Lab. 23, Potter Co. Sch. Lds. W.O.C. S.; 7-in. 4,551 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, sec. 39, Blk. W, T.&P. Sur. Pulling tbg. 1,861 ft.

Crane County

Gulf Oil Corp. No. 4 McKnight, sec 3, Blk. B-21, P.S.L. Sur. Cg. 6,082 ft.

Gulf Oil Co. No. 2-B State-Lassiter, University Sur., Blk. 30, sec. 27. Drlg. 2,475 ft.

Texas Co. No. 1-G Univ., sec. 7, Blk. 30, Univ. Sur. Drlg. 3,425 ft.

Crockett County

Short & Gillette No. 1 J. W. Owens, Jose Zunegas Sur. S.D.R. 1,936 ft.

Culberson County

Harry J. W. Niehaus No. 1 fee, Blk. 109, sec. 13, P.S.L. Sur. 1,800-ft. test. S.D. 2,500 ft.

Quito Oil Co. No. 1 Cameron Lbr. Co., sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. Drlg. 2,005 ft.

Ector County

Fields et al No. 1 Owenwood, sec. 6, Blk. 44, T.&P. Sur. Drk.

Landreth Oil No. 1-P Scarbauer, sec. 11, Blk. A, P.S.L. Sur. S.I. 4,205 ft.

Sinclair Prairie No. 3-A Johnson, sec. 37, Blk. 43, T.&P. Sur. D.&A. 4,520 ft.

Sinclair Prairie No. 2-B P. Moss, sec. 40, Blk. 44, T.&P. Sur. W.O.C.S. 3,752 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. Fsg. 3,-571 ft.

Gaines County

Osage Drlg. Co. No. 1 B. E. Miller, sec. 281, Blk. G, W.T.R.R. Sur. Drlg. 5,-235 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, sec. 25 Blk. 2, H.&G.N. Sur. Drlg. 7,085 ft.

Hockley County

Gulf Oil Co. No. 2 Mallett, Lge. 34, Labor. 25. R.U.S.T. 4,950 ft.

Sid W. Richardson No. 2 Slaughter, Lge. 39, Labor 58, Maverich Sur. Drlg. 4,825 ft.

Snowden & McSweeney No. 1 A. A. Slaughter, Zavalle C.S.L. Sur., Lge. 35, Lab. 74. C.&P.

Skelly Oil Co. No. 1 Elwood Est., Howard C.S.L. Sur., Lge. 15. Drlg. 5,178 ft.

Howard County

Anderson & Prichard No. 1 H. Hyman Est., sec. 85, Blk. 20. W.&N.W. Sur. Drlg. 750 ft.

Lockhart Pet. Corp. No. 2 Robert Scott, W.&N.W. Sur., Blk. 29, Sec. 86. P.B. 2,940 ft.; C.O.; 1,900 ft. O.I.H.

W. B. Powell, Trustee, No. 1 Guitar Trust, Blk. A, sec. 17, Bauer & Cockrell Sur. Drlg. 2,700 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. Drlg. 4,755 ft.

Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. U.R. 4,392 ft.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. S.D. 3,742 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. Rng. 2½-in. for sqz. job.

Martin County

T. G. Shaw No. 1 H. H. Wilkerson, sec. 35, Blk. A, Bauer & Cockrell Sur. Spd.

Menard County

C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. S.D. for 5-in. 1,270 ft.

Pecos County

Geo. J. Greer No. 1 Price Est., Sec. 3, Blk. 12, H.&G.N. Sur. Drlg. 120 ft.

J. N. Gregory et al No. 1 Humble-O'Neill, H.&G.N. Sur., Blk. 10, Sec. 74. Drlg. 625 ft.

Humble O. & R. Co. No. 1 A. H. Robertson, Sec. 27, Blk. OW, T.C.R.R. Sur.; 4,500-ft. test. Loc.

J. D. Kugle, Jr., No. 1 H. L. Cordz, sec. 101, Blk. 8, H.&G.N. Sur. Drlg. 2,-037 ft.

Magnolia Pet. Co. No. 1 McKee. P.B. 6,197 ft.; P.B. 6,180 ft.; tstg. 5,300 ft.

E R. Minshall et al No. 1 Haynie, sec. 28. Blk. 146, T.&St.L. Sur. D.&A. 3,278 ft.

S. Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Fsg. 7,275 ft.

Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W. P. Howard Sur. Drlg. 40 ft.

Union Oil & Mining Co. No. 1 First Natl. Bnk. of Ft. Stockton, sec. 6, Blk. 9, H.&G.N. Sur. S.D. 1,760 ft.

Reagan County

Culbertson & Irwin No. 1 J. F. Nunn, Sec. 26, Blk. B, L.&S.V. Sur. Drlg. 670 ft.

Reeves County

Frankley & Rice No. 1 W. A. Tunstill, Sec. 10, Blk. 56, T.&P. Sur. Drlg. 665 ft.

Ohio Oil Co. No. 1 Papham, sec. 18, Blk 54, T.&P. Sur. Drlg. 2,790 ft.

Scurry County

Coffield & Guthrie No. 1 E. E. Spears et al, sec. 130, Blk. 97, H.&T.C. Sur. Fsg. 3,000 ft.

Gursham-Hunter No. 1 C. M. Wellborn, sec. 142, Blk. 25, H.&T.C. Sur. Drlg. 2,135 ft.

Robinson Drlg. Co. No. 1 Martin, sec. 147, H.&T.C. Sur. T.A. 3,515 ft.

Sterling County

J. W. Sward No. 1 Brennand, sec. 107. Blk. 2, H.&T.C. Sur. T.D. 2,890 ft.; prep. deepen; M.I. heavier rig.

Stonewall County

General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. U.R. 4,785 ft.

Swanson & Parriott No. 1 H. T. Carlisle, sec. 293, Blk. D, H.&T.C. Sur. S.I. 5,-176 ft.

Terrell County

Schermerhorn Oil No. 1 H. P. Allison, sec. 22, Blk. B-2, C.C.S.D. & R.G.N.G. Sur.; 2,500-ft. test. W.O.C.S. 1,405 ft.

Tom Green County

Spinner No. 1 Reed, Mason Ferry Ranch. Sur. Drlg. by bailer 4,414 ft.

J. B. Watson No. 1 Llano, C.S.L. Sur., Sec. 16; 500-ft. test. Drlg. 200 ft.

Val Verde County

A. W. Little No. 1 R. W. Sellers, sec. 34, H.&G.N.R.R. Sur. 1,500-ft. test. Drlg. 200 ft. last report.

Ward County

Peerless O. & G. No. 1 F. M. White, sec. 36, Blk. 1, H.&T.C. Sur. D.&A. 2,200 ft.

Winkler County

S. W. Richardson No. 1-A J. M. Broshara, Sec. 22, Blk. 77, P.S.L. Sur. Loc.

J. R. Sharp No. 1 Sharp-Crume, sec. 7, Blk. B-2, P.S.L. Sur. C.&P.

J. R. Sharp No. 2 Sharp-Crume, sec. 7, Blk. B-2, P.S.L. Sur. Loc.

Yoakum County

R. H. Gill No. 1 S. J. Doxon, sec. 611, Blk. D, Gibson Sur. D.&A. 5,564 ft.

Gulf Oil No. 1 Lucy K. Moore, sec. 897, Blk. D. Tstg. 5,043 ft.

Helmerich & Payne No. 1 S. O'Dowd, sec 896, Blk. D, J. H. Gibson Sur. Comp.; 623 bbls.

Magnolia Pet. Co. No. 1 Lynn, sec. 770. Drlg. 4,698 ft.

Phillips Pet. No. 1 W. A. O'Brien, sec. 442. Drlg. 5,360 ft.

S. C. Yingling et al No. 1 Nettie Barrier, Sec. 6. S.D.; wtr. 1,915 ft.

TEXAS PANHANDLE

Carson County

Texhoma Nat. Gas Co. No. 1 J. M. Poling, Sec. 30, Blk. Y-2, T.&T. Sur. S.G. 2,914-3,058 ft.; sour gas.

Childress County

Aggers & Stewart No. 1 Schulter, Sec. 422, Blk. H, Waco & Northwestern Sur. Drlg. 4,915 ft.

McMillan No. 1 Furr, Sec. 415, SE part of county. D.&A. 5,764 ft.

Collingsworth County

White No. 1 Wischamper. S.D. 2,263 ft.

Johnson No. 1 Taylor. S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell. S.D. 5,650 ft.

Donley County

Robinson No. 1 Kuteman, Sec. 88, Blk. 20, H.&G.N. Sur. Drlg. 2,860 ft.

Floyd County

Mills Bennett No. 1 Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. S.D. 5,960 ft.

Foard County

Smith No. 1 Wisham, Jim Clay Sur. Loc.

Gray County

Lone Star Gas Co. No. 1 Fowler. S.D. 2,730 ft.

Pindeu No. 1 McAfee. Loc.

English No. 1 Eudy. Drlg. 3,950 ft.

Hardeman County

Hillsboro Oil Co. No. 1 Thomas, Sec. 314, Blk. H. Loc.

Lipscomb County

M. C. Tieman No. 1 Spangle, Sec. 626, Blk. 43, H.&T.C. Sur. S.D. 50 ft.

Parmer County

Jennings No. 1 Wilson, Sec. 73, Blk. H, Kelly Subd. Loc.

Potter County

Sinclair Prairie Oil Co. No. 1 Bush, Sec. 23, Blk. 6, B.S.F. Sur., about 3 mi. N of Amarillo; 8,500-ft. test. Drlg. 2,-740 ft.

Roberts County

Whitlock No. 1 Cunningham. S.D. 2,-750 ft.

E. C. TEXAS WILDCATS

Anderson County

J. H. Gardner No. 1 G. W. West, L. Hopkins Sur., 2 mi. SE of Denison Springs. Drlg. 3,625 ft.

H. L. Hunt No. 1 Shaw & Cern, D. Parker Sur. Drlg. 5,350 ft.

Angelina County

W. C. Atkinson No. 1 So. Pine Lbr. Co., T.&N.O. Sur. No. 14, 9 mi. SW of Lufkin. Bldg. roads.

J. C. Bonham No. 4 Cameron Lbr. Co., E. Miller Sur., 7 mi. SE of Zavalla. Loc.

Falls County

M. H. Hayes No. 1 A. Garrett, J. M. Sanches Sur., 2 mi. NE of Lott field. Pmp. 24 B.O.P.D.; T.D. 1,366 ft.

Franklin County

V. A. Hughes No. 1 W. E. Haydon, W. Landrum Sur., 1 mi. SE of Hagansport. R.U.P. 4,345 ft.

Freestone County

G. Shryock No. 1 M. S. Clark, M. D. Canton Sur., 8 mi. NW of Teague. S.D. 1,339 ft.

Grayson County

Epenhauser No. 1 J. M. Rogers, L. Kelly Sur., 1½ mi. NE of Whitesboro. Drk.

O. L. McDougal No. 1 E. Jackson, Holland Coffee Sur., 7 mi. N of Pattsboro. M.I.M.

Mildred Oil Co. No. 1 L. C. Neatherly, Chas. Quillers Sur., 1 mi. S of Collinsville. Cg. 3,990 ft.

Gregg County

Humble-Gulf No. 1 Porter Horton, H. G. Hudson Sur., 3½ mi. SW of Longview; 7,500-ft. test. Drlg. 4,301 ft.

Henderson County

McElrenth & Suggett No. 1 T. L. Dean, C. M. Walters Sur., 1 mi. W of Athens. Loc.

Texas Co. No. 1 R. L. Tarkington, W. K. Newell Sur., ½ mi. SE of outpost to Flag Lake pool. Loc.

Hill County

J. M. Russell No. 1 H. F. Holland, S. C. White Sur., 1 mi. SE of Abbott. W.O.C. 40 ft.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. Drk.

W. S. McGee No. 1 Pritchett, J. Hendricks Sur., 7 mi. W of Mabank. S.D.; W.O. 3,100 ft.

Lamar County

Dahl Bros. & Barr No. 2 McQuiston, R. Russell Sur., ½ mi. N of Paris. R.U.

Limestone County

J. A. Johnston No. 2 Speight, H. Varella Sur., 5 mi. S of Mexia. Loc.

Strowd Gas Co. No. 1 S. Adkins, A. Varella Sur., 1 mi. W of Groesbeck. S.D. 35 ft.

McLennan County

Lisle Steele No. 1 C. H. Cherry, M Martinez Sur., 4½ mi. SE of Waco. Drlg. 1,000 ft.

J. E. Thompson No. 1 F. E. Goodman, C. O'Campo Sur., 4 mi. S of Waco. D.&A. 1,070 ft.

Madison County

W. C. Holleman No. 1 D. C. Cannon, J. P. Phillips Sur., 7 mi. NW of Madisonville. Loc.

Nacogdoches County

C. W. Voyles et al No. 1 M. E. Rider, O. W. Randall Sur., 3 mi. E of Caro. S.D. 4,065 ft.

Navarro County

B. T. Fearis No. 1 W. Montgomery, I. Redding Sur., 7 mi. S of Kerns. D.& A. 3,659 ft.

Howze Oil No. 1 J. A. Jackson, R. C. Doon Sur., ½ mi. E of Powell. U.R. 2,945 ft.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. Loc.

Parsons & Andree No. 1 F. H. Glass, E. E. Lawhorn Sur., 1¾ mi. SE of Point. S.D. 3,880 ft.

Red River County

Daniels et al No. 1 J. J. Gaston, J. Guest Sur., 2 mi. S of Detroit. S.D. 500 ft.

Walters et al No. 1 Phamplin, W. Moore Sur., 3 mi. SE of Kanawha in NW part of county. S.D. 555 ft.

C. E. Whitehead No. 1 R. H. Ringwald, A. Moore Sur., 1 mi. NW of Manchester. S.D. 630 ft.

Rusk County

Drake Drlg. Co. No. 1 R. L. Needham, J. H. Chambers Sur., 3 mi. S of Laneville. Loc.

Smith County

Combest et al No. 1 Dora Kendall; J. Williams Sur., 1¼ mi. SW of Jamestown. S.D. 3,226 ft.

Van Zandt County

W. S. King No. 1 Edna W. Watson, M. G. Whitaker Sur., 5 mi. S of Grand Saline. Drlg. 300 ft.

NORTH TEXAS WILDCATS

Archer County

Fain-McGaha No. 1 McCrory G, sec. 44. A.T.N.C.L. Sur. 6⅝-in. csg. 4,720 ft.; O.S. 4,727-60 ft.; shot 40 qts.; pmpg. 10 B.P.H.

Helmerich & Payne et al No. 2 L. F. Wilson, Blk. 25, A.T.N.C.L. Sur. Testing at 5,105-16 ft.

Panhandle Ref. Co. et al No. 1 H. O. Prideaux, A. Rohus Sur. A-1126. Drlg. 3,901 ft.

Louis Sikes et al No. 1 Ford, T. M. Cecil Sur. A-982. 4,500-ft. test; Tstd. S.W.; S.D.O. 4,204 ft.

Baylor County

J Rogers No. 1 C. F. Elam et al, J. Smith Sur. A-285. S.D. 1,492 ft.

H. F. Wilcox No. 1 J. E. Fritz, D. Barlow Sur. A-10. M.I.M.

Clay County

L. T. Burns No. 1 Lyles, S.A.U.A. Sur. No. 403. Drlg. 4,950 ft.

Walter Gant No. 1 Bryant Edwards, S. C. Beldon Sur. A-12, 6,000-ft. test. 6⅝-in. 5,990 ft.; S.L. 5,994-6,016 ft.; drlg. plug and bailed O.S.; drlg. 6,-165 ft.

Wood Pet. & Roy. Corp. No. 1 I. H. Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. S.D.O. 2,330 ft.

Cooke County

Sinclair Prairie Oil Co. No. 1 Mrs. J. D. Putnam, T. W. Ward Sur. No. A-1089. B.S.S.O. 4,970-83 ft.; tstg.

Grayson County

Mildred Oil Co. No. 1 L. C. Neatherly, Chas. Quillen Sur. Drlg. 3,900 ft.

Hardeman County

Hillsboro Oil Co. No. 1 Thomas, sec. 314, W.&N.W. Sur. Spudded and set surf. csg.

Jack County

Noah Daves No. 1 K. D. Baker, sec. 2709, T.E.&L. Sur.; 4,000-ft. test. Drlg. 2,-120 ft.

Knox County

Roeser Pendleton and I.T.I.O. No. 1 G. H. Beavers, sec. 151, H.&T.C. Sur. Drlg. 2,801 ft.

Montague County

H. H. Powell No. 1 Arch Durham, W. J. Wagoner Sur. A-936. S.D. 822 ft.

J. W. Sorrell et al No. 1 J. E. Walthall, Sam H. Smith Sur. A-662. S.D. 3,777 ft.

Wichita County

Continental Oil Co. No. 1 State Ins. Asylum, Blk. 1, Cherokee Co. Sch. Ld. 6⅝-in. 5,075 ft.; SL 5,076-5,128 ft.; drlg. plug; flwd. 90 bbls. in 3 hrs.; trtd. with 8,000 gal. acid; est. 150 B.P.D.; tstg. C.O.

Wilbarger County

Consolidated Oil Co. No. 1 Ancell, sec. 35, H.&T.C. Sur. R.U.R.

Target Drlg. Co. No. 1 W. T. Waggoner, sec. 27, H.&T.C. Sur., Blk. 6. Drlg. 3,600 ft.

Young County

Horwitz & Oldom No. 1 C. J. Taach B, sec. 248, T.E.&L. Sur. Drlg. 3,605 ft.; 6⅝-in. 4,113 ft.; G.L. 4,113-36 ft.; show oil; drlg. plug; small S.O.; S.D.O. 4,218 ft.

RANGER (CENTRAL TEXAS) DISTRICT

Brown County

Buckler No. 1 Jacobs, Kerr Co. Sch. Lds., Abst. 278. Tstg. 1,568 ft.

Evans No. 1 Garms, sec. 12, Blk. 1-11, H.&T.B. Sur. S.D. 968 ft.; T.D.

Hightower O. & R. Co. No. 1 Payne, sec. 31, H.&T.C. Sur. Drlg. 700 ft.

Lynn & Jordan No. 1 Eades, J. West Sur., 7 mi. SW of Santa Anna. S.D.R. 415 ft.

Moore No. 1 Smith, Jno. S. Thomas Sur. No. 53, Abst. 897. W.O.C. 1,578 ft.

Whatley No. 1 Browder, C.T.R.R. Sur., Abst. 281. T.D. 1,095 ft.; S.D.

Callahan County

Cooper, Weeks & Hughes No. 1 C. D. Straley, 660 ft. from W L, 1,880 ft. from N L, sec. 370, Geo. W. Denton Sur. Ordovician test. T.D. 4,437 ft.; S.L.M.

Dobbs Oil Co. No. 1 Finley, sec. 75, Bayland Orphans Home Ld. Drlg. 1,200 ft.

J. H. Howell No. 1 E. L. Vestal, 1,149 ft. E line, 1,000 ft. N line, Jesse Dyson Sur., 2 mi. NE Cross Plains. Drlg. 3,-698 ft.

J. C. Jackson et al No. 1 Thompson, 2 mi. S of Eula, sec. 30, B.B.B.&C. Sur. S.D. 1,645 ft.

Coleman County

Anzac Oil Corp. No. 1 Burk. A. Williams Sur. Est. 15 B.O.P.D. 2,458 ft.; T.D.

F. L. and E. R. Cooper No. 1 W. R. Stockard, 330 ft. from NL, 330 ft. from WL, N½ SE¼ sec. 23, T.&N.O. Sur. Rotary to 3,650 ft.; S.O. 3,657 ft.; S.D. new motor 3,657 ft.

Garrett Oil Co. No. 1 W. S. Smith et al, 4 mi. SE of Coleman, J. Thiele Sur. H.F.W.; est. 2,000,000 ft. gas; U.R. 2,-200 ft.

Bob Murray No. 1 Dibrell, H. Kigan Sur., near Camp Colorado. P.B. 2,840 ft.; tstg.; old T.D. 2,865 ft.

Comanche County

Compton No. 1 Griffin, Blk. 2, Comanche Co. Sch. Lds. S.D.O. 1,995 ft.

Elmore No. 1 Moorman, sec. 37, D.D.& A. Sur., 3 mi. NE of Sipes Spgs. M. I.M.

Loraine No. 1 Haile, sec. 9, Blk. 3, H. &T.C. Sur. Tstg. 2,707 ft.

Sells Pet. Co. No. 1 Smith, sec. 12, Blk. 2, H.&T.C. Sur. Drlg. 2,524 ft.

Eastland County

Baker No. 1 Mullroy, sec. 1, Wm. Ahrenbeck Sur., 5 mi. NW of Rising Star. C.O. after shot 3,094 ft.

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. Drlg. 1,100 ft.

Hayner, Reaves & Hose No. 1 P. L. Larkin, 3 mi. NW Rising Star, 912 ft. from W line, 546 ft. from S line, NW¼, sec. 40-2, E.T.R.R. Sur. Tstg. 3,098 ft.

Erath County

McGee Dev. Co. No. 1 Till Robinson, Wm. Ashworth Sur., 2 mi. SE of Desdemona. Drlg. 2,110 ft.

Wayne Chandler No. 1 Chandler. Drlg. 325 ft.

Fisher County

Forest Dev. Co. No. 1 Morrow, sec. 48. Blk. 2, H.&T.C. Sur. Cg. sat. L. 3,680-98 ft.

Owens-Snebold & A. C. Varner No. 1 J. H. Millsap, 3,500-ft. wildcat, 2 mi NW McCaulley, 330 SL 330 WL sec. 61-2, H.&T.C. Sur. Moving on larger rig; 530 ft.

T. G. Shaw Oil Corp. and Texas Co. No. 1 John Stribling, sec. 110, Blk. 3, H.&T.C. Sur. Drlg. 3,403 ft.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. No. 51. Loc.

Haskell County

Fain-McGaha Oil Corp. No. 1 T. G. Hendrick, C W½ sec. 104, Indianola Ry. Sur. S.D. 3,089 ft.; sulfur wtr.

Forest Dev. Co. No. 1 Bankers Life Co., J. F. Morgan Sur. No. 59. S.D. O. 3,850 ft.

Heenam & Coe No. 1 Jones, Corryell Co. Sch. Lds. Drk.

Indian States No. 1 Jones, Coryell Co. Sch. Lds. Drlg. 900 ft.

Marland Drake No. 1 Cob, J. F. Benson Sur. No. 96. Loc.

Jones County

Brown Eagle Oil Co. No. 1 Haynes, sec. 191, Lemuel Andrews Sur. U.R. 1,750 ft.

Dunigan Bros. and Fred Hyer No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. Csg. stk. 3,265 ft.

R. B. Farris No. 1 Chas. Donohoo, 220 ft. from S and E lines, N½ sec. 5, B.B.B. &C. Sur. Fsg. 2,090 ft.

Grisham-Hunter Corp. No. 2 E. D. Appling, 1,140 ft. fr. E L, 1,208 ft. S L. NW¼ sec. 32, B.B.B.&C. Sur. Set csg. 2,350 ft.; S.O.

S. C. Herring No. 1 B. L. Ellis, 330 ft. fr. N and E lines, SE¼ sec. 8-15, T.&P. Sur. Loc.

Humble O. & R. Co. No. 1 Huddleston, sec. 49, Blk. 18, T.&P. Sur. Drlg. 2,030 ft.

C. B. Lynn No. 1 C. P. Poe, L. Katz Lee Sur. No. 335. Loc.

Pet. Producers No. 1 McDuff, sec. 32, Blk. 15, T.&P. Sur. Fsg. 1,460 ft.

S. B. Roberts Co. No. 1 Roy E. Prichard, 205 ft. fr. S L, 2,428 fr. E L, J. E. Cockrell Subdiv. 2, G. Martinez Sur. 195. Loc.

Sinclair Prairie No. 1 Williams, sec. 40, Blk. 18, T.&P. Sur. Drlg. 615 ft.

Nolan County

Oyster, Harkrider et al No. 1 J. H. Withers, C SW¼ sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft. Drlg. 3,690 ft.

Shackelford County

Joe DeGrazier No. 1 Harbough, E cen. part of county, sec. 1,563, T.E.&L. Sur. 4,500-ft. test. S.D.O. 3,171 ft.

Forest Dev. & Heimerich & Payne No. 1 T. G. Hendrick, C sec. 1, A.B.&M. Sur. Show gas and oil cored 4,838-45 ft.; T.D. 5,056 ft.; set 7-in. to 4,818 ft. to test showing 4,819-37 ft. in Marble Falls; last report.

R. H. Gordon & Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, sec. 38, L.A.L. Sur., 4,500-ft. test. Drlg. 2,325 ft.

J. G. Hammond No. 1 Coker, 1,620 ft. from S line and 1,020 ft. from W line, sec. 159, B.B.B.&C. Sur. U.R. 4,146 ft.

Jones & Stasney No. 1 Davis, sec. 50, Blk. 13, T.&P. Sur. D.&A. 1,545 ft.

D. W. Power No. 1 Black Ranch, C SE 80 ac. of NE¼ sec. 391, T.E.&L. Sur., Ellenburger test.

Stephens County

Lone Star No. 1 E. H. Brooks, 400 ft. from S and W lines, NE 200 ac. of sec. 54-7 T.&P. Sur. Tstg. 2,000,000 ft. gas 3,723-27 ft.

Lone Star No. 1 J. S. McKee, 660 ft. from N line, 660 ft. from W line, sec. 41-7, T.&P. Sur. U.R. 3,724 ft.

Taylor County

A. R. Forester et al No. 1 Frederickson, sec. 1, Guadalupe Co. Sch. Lds. Sur. No. 120. C.O. after shot 2,377 ft.; est. 85 B.O.P.D.

T. M. Knoles No. 1 Bowles, Sec. 21, B. A.L. Sur. Loc.

Throckmorton County

Beacon O. & R. Co. No. 1 Hawes Est., sec. 979, T.E.&L. Sur. Swbg. S.W. 4,070 ft.; T.D.

Jones & Stasney No. 1 C. T. Brockman 330 ft. S line, 330 E line sec. 95 Comanche Indian Sur. T.D. 4,706½ ft.; est. 1,000 to 1,500 B.O.P.D.; acd. 4,711 ft.; ga. 145 B.O. 2 hrs.

Marland-Drake No. 1 Dickie Bros., center T.E.&L. Sur. 2226. S.D. 4,085 ft.

Stasney et al No. 1 Hunt, sec. 965, T. E.&L. Sur. U.R. 1,628 ft.

Target Drlg. Co. No. 1 E. W. Hunt, Col. Co. Sch. Lds. Drlg. 4,885 ft.

White & Duncan No. 1 Raynolds Cattle Co., 330 ft. from S and W lines, NE¼ sec. 83, Comanche Indian Reservation. Drlg. 2,865 ft.

Canadian Fields

(Continued from Page 117)

provinces, and the increase resulting from good crops. Storage supplies of gasoline and oils in this area were pretty well depleted, and refineries are planning to operate to capacity to meet the harvesting demand and build up adequate reserves.

East Side Drilling

In the New Valley structure northwest of Turner Valley, McLeod Oil Co. No. 1, LSD 4, Section 6-21-2w5, is running casing to 8,200 feet preparatory to bailing crude.

Rocky Mountain House Area

In the northern foothills near Rocky Mountain House, considerable new drilling is in prospect. This area was first tested in 1914 when Alberta Associated Oil Fields, Ltd. drilled in LSD 3, Section 34-39-10w5. The test encountered some oil shows but was not carried to completion, though the company has kept its leases in good standing.

At the present time, Home Oils No. 1 Brazeau, LSD 16, Section 7-43-17w5, is running 10-inch casing to 4,520 feet. This location is over 100 miles from Rocky Mountain House, and 30 miles northwest of Nordegg.

Ram River Oils, Ltd. is preparing to drill on Tawadina Creek 25 miles west of Rocky Mountain House and 14 miles southwest of Phoenix, the nearest rail point. Before diamond drill equipment could be moved to location, a ferry had to be built to cross the North Saskatchewan River and a 14-mile road for trucks. No. 1 test is expected to spud in September. Fairly shallow production is anticipated.

About 20 miles southwest of Rocky Mountain House, Canyon Oils, Ltd. and the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary are preparing for a joint test on the Clearwater anticline, west of Innisfail. Geological investigations indicate a structure 15 miles long and 2 miles wide. Drilling will start in the Banff shales, with production expected in the Devonian limestone around 2,000 feet. Diamond drill equipment will be used. E. B. Clark of Seattle and Vancouver and C. T. Brown of Calgary are associated with Canyon Oils. Ltd.

Bearberry Structure

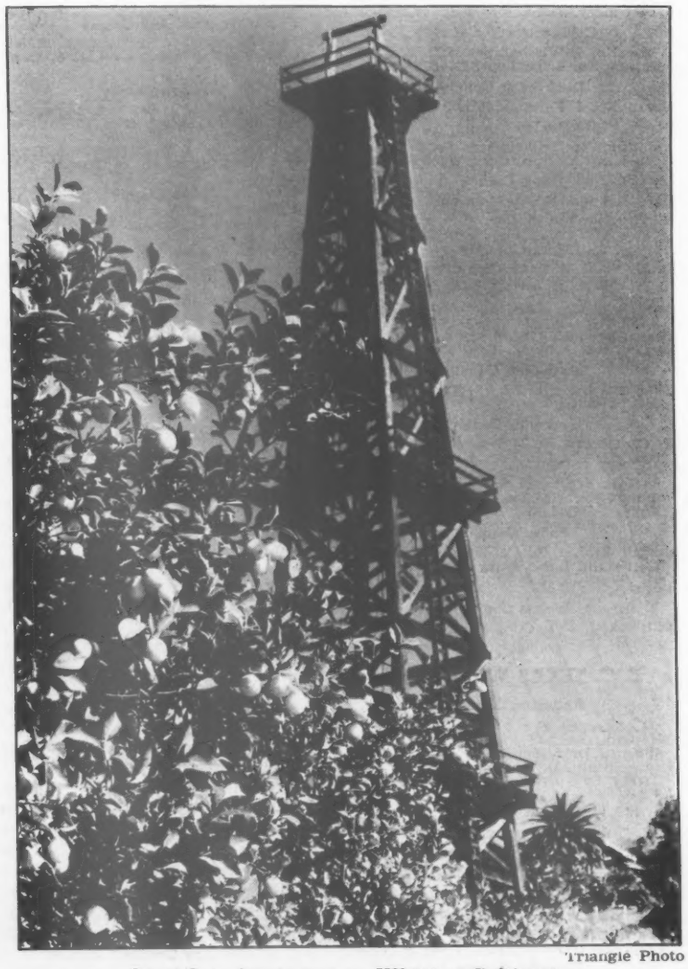
On the Bearberry structure, west of Sundre, Petroleum Structures No. 1, LSD 4, Section 2-33-7w4, has spudded. The test is jointly sponsored by Canadian Western Natural Gas, Light, Heat & Power Co., Anglo-Canadian Oil Co. of Calgary, Calgary & Edmonton Corp. of Winnipeg and Neil McQueen and associates of Vancouver.

Tests in the Foothills

On the Pouce Coupe structure in the northern foothills west of Peace River, Guardian Oil Co. No. 1, Section 7-80-12w6, is below 1,100 feet after cementing 8-inch casing at 1,067 feet.

On the Highwood-Sinclair structure, southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, Section 34-17-2w5, is below 6,268 feet, more than 900 feet in the Madison limestone, and using its own gas as fuel.

On the Watson structure in the southern foothills, Mar Jon Oil Co. No. 3, LSD 3, Section 4-10-2w5, is moving in rotary equipment to resume from 5,520 feet. The test, bottoming in the Blairmore formation, has been standing with 8-inch casing set at 5,150 feet. A number of oil and gas shows were met in the upper horizons. Drilling started in the Benton formation and will be continued to test the Madison limestone. The gas flow is sufficient to fire one of the boilers for the rotary outfit.



Triangle Photo

Derrick in lemon grove, Whittier, California

Border Fields

On the Rogers-Imperial structure in southern Alberta east of Coutts, Range Oil & Gas Co. No. 3, LSD 15, Section 20-1-11w4, encountered a gas flow, estimated from 2,000,000 to 4,000,000 feet a day, in a stray sand below 2,500 feet, and is deepening below 2,628 feet. The main sand is expected around 2,775 feet.

In the Lethbridge area, Northwest Co. No. 1 Lethbridge Southern, LSD 8, Section 1-8-21w4, bottoming in the Madison limestone at 4,055 feet, is testing production after gun-perforating and acidizing with 1,000 gallons. The well has a little oil and considerable water, and will likely be abandoned. Lethbridge Petroleums & Refining No. 1, LSD 12, Section 11-8-22w4, is standing cemented at 2,915 feet, about 50 feet above the Bow Island sand, where a gas strike is anticipated.

In the Taber field, North Taber Royalties No. 1, LSD 7, Section 10-11-15w4, is below 400 feet after cementing 13-inch casing for water shut-off at 336 feet. Plains Petroleum Corp. No. 3, LSD 16, Section 26-9-17w4, abandoned in the lime at 3,434 feet, has been pulled and plugged. The salvaged casing will be used for Plains No. 4, LSD 15, Section 25-9-17w4, standing at 2,580 feet.

In the Barnwell area, Border Petroleums No. 1, LSD 5, Section 32-19-17w4, is making new hole below 2,504 feet after drilling through 300 feet of cement. It is expected to get oil in the upper Madison around 3,300 feet.

On the Del Bonita structure south of Lethbridge, Terminal Oil Co. No. 2, NW Section 7-1-21w4, has spudded. Terminal No. 1, some 3,000 feet east, is rigging equipment to take production from the top of the lime. It has a small light crude production, with considerable gas.

In the Steveville area, Anaconda Oil Co. No. 1, LSD 15, Section 9-22-12w4, is at 2,100 feet and running 10-inch casing to overcome caving.

Milk River Test

A test will be started in a few weeks on a new structure near Milk River, and about 13 miles east of Coutts in southern Alberta, by interests headed by Francis P. Byrne, president of the Anglo-Canadian Oil Co. A new company will be organized to handle the test. Contract has been let to Drilling Contractors, Ltd., an Anglo-Canadian subsidiary, and equipment is now being hauled. The test is primarily for gas production.

Saskatchewan Test

In the Unity district, western Saskatchewan, Vera Oilfields No. 2, LSD 5, Section 23-41-24w3, is at 2,010 feet after drilling through a 10-foot oil sand. A government production test will be made.

Ontario Drilling

In the Dover field, Kent County, Ontario, Prairie Gas & Oil Co. No. 7, Lot 5, Front Concession, Dover East Township, got the Trenton formation at 2,870 feet and finished at 3,214 feet, with a good flow indicated. A small oil show was struck below the shale break in the lime, but was plugged off to prevent the oil entering the gas horizon.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Aug. 20 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
78	55	500	72	70½	72	Amerada Corp.	788,675	N.P.	50cQ	7-30-38	$2.00	114⅞	51½	125½	75
27⅜	17¾	2,800	23½	23	23⅛	Atlantic Refining	2,663,999	$25	25cQ	9-15-38	1.00	37	18	35⅛	26⅝
23⅜	12⅛	2,400	20¼	18⅝	20	Barber Asphalt Co.	390,223	$10	75c	12-16-37	1.00	43⅜	10⅛	38½	21
21⅜	10⅛	11,100	18⅜	17⅜	18	Barnsdall Oil Co.	2,250,344	$5	25cQ	8-1-38	1.00	35¼	10	28¼	14⅛
10¾	7	17,400	9¾	9⅛	9¼	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	8-15-38	.90	17⅝	7	17¼	11⅛
35¾	21¼	3,900	33½	31¾	32⅞	Continental Oil of Delaware	4,682,583	$5	25cQ	9-30-38	1.50	49	24	44⅞	28⅛
9¾	5	4,200	8¼	7¾	8⅛	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	17⅝	4¾	13⅞	6⅝
22⅝	12¼	3,000	18¾	17½	18⅛	Mid-Continent Petroleum	1,857,912	$10	25c	6-1-38	1.50	35⅝	14	30⅞	17¼
17¾	10⅝	600	15½	15	15½	Mission Corporation	1,382,945	$10	$1	6-29-38	1.25	34	15	29⅞	16⅜
23	14⅛	5,900	18⅝	17	17⅝	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	(‡)	41⅜	17⅝	75½	19⅞
14⅞	9	8,700	11⅛	10¼	10⅜	Ohio Oil Co.	6,563,377	N.P.	50c	12-15-37	1.00	22⅞	8	18	12⅛
15⅞	10¼	1,200	13	12⅝	12¾	Pacific Western Oil	1,000,000	N.P.	75c	12-15-37	.75	29¾	11¾	23½	11¾
9¼	7	No sales ..	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1 •	12-21-37	1.00	17⅛	7	20⅝	12¼
44⅜	27¼	12,200	41½	39¼	40	Phillips Petroleum	4,449,052	N.P.	50cQ	9-1-38	2.75	64	30⅛	52⅝	33⅛
25⅜	15	800	23¼	22	23	Plymouth Oil Co.	1,029,800	$5	35cQ	6-30-38	1.65	29⅞	13	27¾	11⅞
13½	8¼	12,500	11½	10⅝	10⅞	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	.25	24⅝	8¾	27⅞	16
8⅞	5	8,300	8¼	7⅝	7⅞	Richfield Oil Corp.	3,896,638	N.P.	25c	12-24-37	.25	6½	4⅛	..	
27½	15½	2,200	23	22	22½	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	9-15-38	1.00	54⅛	16	44	30½
18⅜	10	2,400	16½	15⅝	16½	Shell Union Oil	13,070,625	N.P.	35c	7-15-38	1.00	34¾	14⅞	28¼	14⅝
34¾	18½	700	28⅜	27	27¼	Skelly Oil	1,003,949	$15	50c	6-25-38	1.50	60⅝	26½	47⅝	19½
16⅜	10¾	23,200	15⅛	14¼	14¾	Socony-Vacuum	31,151,071	$15	25c	9-15-38	.80	23¼	13	17½	12½
34⅞	25⅛	8,700	31⅞	30⅞	31½	Standard Oil of California	13,014,754	N.P.	35cQ†	9-15-38	2.00	50	27⅛	47⅝	35
35½	24¾	2,900	32	30¾	31¾	Standard Oil (Indiana)	15,267,030	$25	25cQ	9-15-38	2.30	50	26½	48½	32⅝
35½	22½	No sales ..	..	..	..	Standard Oil of Kansas	112,837	$10	$5	12-20-37	5.00	43	30⅝	31	25
58⅜	39⅜	16,700	54¾	52⅞	54¼	Standard Oil of New Jersey	26,224,767	$25	$1SA†	6-15-38	2.50	76	42	70⅜	51⅛
59	45	300	55½	55¼	55½	Sun Oil	2,316,484	N.P.	25cQ	9-15-38	$1 & 8% Stk.	77½	44½	91	70
4¼	1¾	3,800	3½	3¼	3¼	Superior Oil Corp.	1,388,079	$1	....	....	....	7¾	1½	6¾	3
49⅝	32⅝	14,200	46½	44¾	46¼	Texas Corp.	10,875,006	$25	50cQ	7-1-38	2.25	65⅛	34¾	55¼	28⅞
5¼	2⅝	4,100	4¾	4⅜	4⅝	Texas Gulf Producing Co.	888,137	N.P.	10c	12-23-37	.10	9⅝	2	8⅞	4⅜
12½	7	3,500	11⅞	11¼	11⅜	Texas Pacific Coal & Oil	888,237	$10	10c	9-1-38	.40	16⅝	5⅝	15¼	7½
15¾	10⅛	8,800	14⅜	13½	13¾	Tide Water Associated	6,369,175	$10	25cQ	6-1-38	1.20	21⅝	13⅛	21¾	14⅜
22½	17⅛	1,400	21⅛	20¾	21	Union Oil of California	4,666,270	$25	30cQ	8-10-38	1.40	28¼	17½	28½	20⅜
23½	10	300	22	21¾	22	Union Tank Car Co.	1,200,000	N.P.	30cQ	9-1-38	1.60	31½	22	31⅝	22⅝
3½	1⅝	900	3¼	3	3¼	Wilcox Oil & Gas	506,522	$5	....	5-10-28	....	6¼	1¾	5¼	2¾

•Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock

New York Curb Exchange

1938 High	1938 Low	Week ending Aug. 20 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
11¾	4	9,700	11¾	10¾	11	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.40	10	6⅝	..	
10¼	5⅛	400	7½	7	7⅛	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$2.00	21⅝	7	21	13¼
39	29	No sales ..	..	..	..	Buckeye Pipe Line Co.	200,000	$50	25c	9-15-38	3.75	51½	36	50	39¾
113	97	No sales ..	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	9-27-38	7.00	123	95½	124¾	105
11	7¾	3,000	8¾	8	8¼	Cities Service (new)	3,714,317	$10	....	6-1-32	....	5⅝	1½	7⅝	3
2⅜	⅞	3,100	1⅝	1⅜	1⅝	Cosden Petroleum	462,551	$1	....	....	....	5½	1½	4½	1½
27½	17½	400	22½	21½	22½	Creole Petroleum	6,975,383	$5	50cSA†	6 10-38	1.00	38¾	20¼	39	19⅞
10¼	5½	500	9⅞	9¾	9¾	Darby Petroleum	351,390	$5	25cSA	7-15-38	.50	18⅝	6½	18⅛	9
3½	2	400	2½	2⅛	2⅛	Derby Oil & Refining	263.162	N.P.	....	....	....	8⅜	2¼	6⅜	1⅞
31	22	No sales ..	..	..	..	Eureka Pipe Line	50,000	$50	50c	8-1-38	4.00	47½	24½	47½	38½
46⅞	33	2,800	43½	42	42¾	Gulf Oil Corp.	9,076,202	$25	25cQ	7-1-38	1.00	63½	33	59	36
72⅝	56	2,800	70⅝	69⅜	70	Humble Oil & Refining	8,987,840	N.P.	62½c	10-1-38	2.00	87	54⅞	80	57
19½	15	1,000	17	16¾	17	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-38	1.25	24¼	14½	24½	19⅝
9¼	6⅝	No sales ..	..	..	..	Indiana Pipe Line	300,000	$10	30c	5-14-38	.80	15	5⅞	9¾	5½
31¼	23	2,200	26	25⅜	26	International Petroleum	14,324,088	N.P.	$1.25†‡	6-1-38	2.50	39½	23½	39⅝	32⅝
5	3	No sales ..	..	..	..	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	8⅝	2⅝	5⅝	2⅝
25⅛	15⅝	10,100	25	22½	23	Lion Oil Refining	434,820	N.P.	25cQ	7-25-38	1.50	34	12½	17⅜	7⅜
10¼	6⅝	1,000	9⅞	9¾	9¾	Lone Star Gas	5,533,747	N.P.	20c	8-20-38	.60	14¼	5¼	14¼	9⅞
9⅜	6½	900	7¾	7½	7⅝	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	9-15-38	.50	15¼	6¾	15⅝	9⅞
9¼	6⅜	200	8⅞	8¾	8⅞	Midwest Oil Co.	998,444	$10	50c	6-15-38	1.00	14⅝	6¼	..	..
5¾	4½	800	5⅝	5⅝	5⅝	Mountain Producers	1,593,584	$10	30cSA	6-15-38	.60	7⅞	4⅛	8⅝	5
14⅝	11⅝	6,300	12⅛	11⅞	12⅛	National Fuel Gas	3,810,183	N.P.	25cQ	7-15-38	1.00	19⅛	12	23	17⅝
9¼	7¼	100	7⅞	7⅞	7⅞	National Transit	509,000	$12.50	35cSA	6-15-38	1.00	12½	7¼	15⅝	9¼
2⅝	1½	100	1¾	1¾	1¾	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	....	5	1⅜	6⅝	1⅝
4½	4	100	4	4	4	New York Transit	100,000	$5	15c	4-15-38	1.00	5⅝	3⅞	6¼	4¼
6	4	No sales ..	..	..	..	Northern Pipe Line	120,000	$10	20c	6-1-38	1.00	12⅜	5⅜	9⅝	4⅞
7⅞	3¾	6,300	4¾	4½	4⅜	Pantepec Oil	2,441,142	$1	....	....	....	9⅝	2¾	10⅛	3¼
3½	1⅝	300	2⅝	2½	2⅝	Root Petroleum Co.	336,045	$1	25c	2-1-37	.25	13¾	2	19¼	4½
4	2⅛	No sales ..	..	..	..	Ryan Consolidated	296.931	N.P.	....	....	....	6½	2¼	4⅜	1⅞
5⅝	3⅝	300	3⅞	3⅞	3⅞	Southern Pipe Line	100,000	$10	15cSA	3-1-38	.45	7¼	3⅞	7⅞	3¼
39	28¾	600	36	35½	35½	South Penn Oil	1.000.000	$25	50cQ†	6-30-38	3.65	56	35	44	32½
22¼	19	No sales ..	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	7-1-38	2.00	42	20	60	44
18¾	15	800	18½	17⅞	18½	Standard Oil of Kentucky	2,604,790	$10	25c	9-13-38	1.50	21½	14¾	23⅜	17⅛
7¼	6⅛	100	6½	6½	6½	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	.25	13¾	8	14⅝	11
22¾	16¼	700	22	21	22	Standard Oil of Ohio	753,740	$25	25c	9-15-38	1.50	45	16	40	21¾
3¼	2⅛	4,700	2¾	2⅝	2¾	Sunray Oil	2,006,176	$1	10c	12-24-37	.25	4⅜	2	5	2⅝
5	3½	1,000	4½	4¼	4⅛	Texon Oil & Land	936,024	$2	15cQ	6-30-38	.45	7⅝	2	9⅜	5⅜
7⅝	4¼	400	6	5⅞	6	Transwestern Oil Co.	750,000	$10	....	....	....	13⅜	4⅝	..	..
5¼	2¾	3,700	3⅞	3¾	3⅞	United Gas Corp.	7,818,959	$1	....	....	....	13⅜	3	10⅜	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

PERSONAL

CHARLES MILLION, land man for the H. F. Wilcox Oil & Gas Company in Wichita Falls, Tex., was looking over the Illinois basin oil play last week, with the reported intention of establishing an office for his company in that area.

H. H. ELDER, formerly sales manager of the Cities Service Oil Company of Tulsa, has been appointed division manager of the Oklahoma and western Arkansas district. He succeeds J. R. TROLINGER, who was transferred to the Michigan office. HARRY F. GOOLD, formerly district manager in Oklahoma City, will succeed Mr. Elder as sales manager in Tulsa. Mr. Elder, who has been with the company since 1917, began as an engineer in Hominy, Okla. He was in the engineering department 11 years and has been in the marketing department for the last 10 years.

DICK SCHWAB, independent operator and producer of Houston, Tex., has gone to Colorado for a vacation outing.

H. G. McLEAN, head of the accounting department of the Cities Service Oil Company, Tulsa, left for an outing in Iowa.

EARL HANKAMER, independent oil man of Houston, Tex., spent several weeks on vacation in the mountains of Colorado.

C. E. HEARN, of the Tulsa offices of the Gulf Oil Corporation, and MRS. HEARN are spending a vacation driving through the Rockies.

T. B. HUDSON, counsel for the Phillips Petroleum Company and president of the Polymerization Process Corporation, sailed from New York recently for a vacation in Europe.

GLENN W. CLARK has resigned from the legal department of Cities Service Oil Company in Bartlesville, Okla., to become general attorney for the Panhandle Eastern Pipe Line Company with headquarters in Kansas City, Mo.

DON H. HILL, assistant manager of the land and leasing department of the Skelly Oil Company, is temporarily located in Mattoon, Ill. The company has transferred W. W. SIMPSON from Great Bend, Kans., to Mattoon as field scout.

E. A. LANDRETH, chairman of the board of the Landreth Production Corporation, accompanied by MRS. LANDRETH, left for Honolulu. They will not return until fall. S. H. CASTEEL, chief geologist for Landreth, is spending several weeks' vacation in the East. He will return by way of Canada.

C. E. COOK, who has been in charge of Forest Oil Company operations in the Allegany field, New York, has been named general superintendent. He and MRS. COOK have moved from Richburg, N. Y., to Bradford, Pa., headquarters of the company, largest producer in the Bradford field.

ERNEST C. ARNOLD, for nine years district manager at Oklahoma City, Okla., for the U. S. Geological Survey, has been transferred to Roswell, N. M., as deputy supervisor. His territory includes New Mexico, Arizona and parts of Utah and Colorado. E. M. PILKINGTON, formerly assistant to Mr. Arnold, is made district engineer at Oklahoma City. The survey's branch office in Wichita Falls, Tex., has been moved to Ardmore, Okla., with THOMAS L. COLEMAN as district engineer in charge.

JOSEPH COBB and PERCY ERVIN, of Baton Rouge, La., graduates of Louisiana State University, are now associated with the Louisiana state department of conservation, as petroleum engineers.

WILLIAM H. WILSON, of Wichita Falls, Tex., drilling contractor operating in Texas, is in California studying the technique employed by California companies and drilling contractors. Operators have been adopting new and more effective practices in California during the past six months and are daily establishing new speed records.

O. W. WEAVER, editor of The Empire, house organ of the Empire companies, and long in the Doherty service, has resigned, according to announcement from the Bartlesville, Okla., offices of the Cities Service Company. His resignation will take effect September 1. Mr. Weaver has not been in good health. He went to the Empire 15 years ago from the faculty of Kansas State College. Before that he had worked for the Kansas City Star.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

A. J. Hazlett, of the southern bureau of The Oil and Gas Journal, at Houston, Tex., has been advanced to the Tulsa main office as associate editor, and has been succeeded in Houston by George Blardone.

In addition to the market price of crude oil produced in Canada the Dominion government pays the producer a premium or bonus of 52½ cents per barrel. New Brunswick, Ontario, Manitoba, Saskatchewan and Alberta are all being prospected.

The oil produced in Okmulgee County is the best in Oklahoma. That county promises to be one of the most prolific oil regions in the state.

There are eight known productive sands in Oklahoma the lowest of which is the Burgess, on top of the Mississippi lime.

20 YEARS AGO

Miss Anna Reed has been given the job of telegraph operator and tank gauger for the Empire Pipe Line Company at the Arkansas City, Kans., pump station. Miss Reed wears masculine attire when at work. She is the first woman tank gauger. She succeeds a male who is in Uncle Sam's big army.

10 YEARS AGO

Texas Railroad Commission credits the Yates and Hendrick pools of western Texas with a combined potential production of 3,562,081 barrels based on short-time production of key wells.

Oklahoma is producing 700,000 barrels of oil per day.

J. Elmer Thomas, geologist and oil producer, joins the New York Stock Exchange firm of Fenner & Beane. He will give particular attention to oil securities. Mr. Thomas will remain in Fort Worth, Tex.

A dispatch from Lima, Peru, says Benedum & Trees of Pittsburgh, Pa., have been granted a concession of 12,500,000 acres in Peru for colonization and oil exploration and development.

TEMPLE HARGROVE, independent oil operator of Houston, Tex., has returned from a summer vacation tour, which took him to Mexico.

E. H. BLUM, vice president and general manager of the Atlantic Refining Co., in Dallas, Tex., is spending several weeks' vacation in the East.

P. E. NOLAN, chief gelogist for the Mene Grande Oil Company, Maracaibo, Venezuela, is on vacation in Wisconsin. He plans a trip later to Pacific Coast points.

DR. F. M. ROGERS, chief chemist of the Standard Oil Company of Indiana refinery in Whiting, Ind., has been awarded a gold pin by the company in recognition of 30 years of service. Joining the Standard in 1908, he became chief chemist in 1914.

DONALD C. BARTON, research geophysicist for the Humble Oil & Refining Company, Houston, Tex., and MRS. BARTON, are on a vacation jaunt to Boston, Mass., and other eastern points.

C. P. STANFIELD, recently made purchasing agent for the Western Gulf Oil Company in Bakersfield, Calif., is on vacation on Catalina Island with MRS. STANFIELD and their daughter. Mr. Stanfield replaced C. A. YOCUM, whose headquarters have been transferred to Los Angeles.

E. C. HERTHEL, in charge of refining development for the Sinclair Refining Company in New York, arrived in California August 21 to aid in supervising the completion of work on the Richfield Oil Corporation's $5,000,000 Watson refinery. He probably will remain in the Los Angeles area for two months or more.

PARAGRAPHS

W. I. CUNNINGHAM has been made geologist in charge of the Bishop Oil Company's California geological and land department with headquarters in the Professional Building, Bakersfield. Mr. Cunningham was scout and geologist for the company in the Mid-Continent for a number of years. CARL TODD has been appointed assistant geologist in Bakersfield.

J. A. MURPHY, of the land department of the Indian Territory Illuminating Oil Company in Bartlesville, Okla., has been made head land man in the newly established Illinois headquarters of the company at Mattoon. Other I.T.I.O. employees transferred to Mattoon include JOHN GLAHN, field land man, transferred from Abilene, Texas; C. M. CLARK, geologist, from the Bartlesville offices; MAX D. ENGLE, geological scout, from the Midland, Texas, office; and ELIZABETH VON GONTEN, stenographer, also from the Midland office. Mr. Glahn is succeeded by REESE CLEVELAND, transferred from Midland. The Mattoon offices are at 36 Demaree Building.

F. C. SEALY, formerly chief production engineer for the Texas Company in Houston, Tex., and more recently manager of production on the Pacific Coast for the Texas Company of California, has been transferred to the New York office. JAMES T. WOOD, JR., has been appointed to succeed Mr. Sealy on the Pacific Coast and W. S. ROGERS has been made his assistant.

JACK RUSHMORE, in charge of the Denver, Colo., division of the Gulf Oil Corporation, has been made head of the company's land and leasing department in Tulsa. He succeeds B. F. BRIDGES, who now is overseeing Gulf's operations in Illinois. EVERETT CHAPMAN, seismograph scout for Gulf in the Denver district, has been transferred to Oklahoma City, succeeding WILBUR GRIFFITH, who also has been sent to Illinois.

ERNEST A. SATCHELL, formerly production superintendent for the Lago Petroleum Corporation in Maracaibo, Venezuela, but for the past six years in a similar capacity for the Iraq Petroleum Company, Ltd., London and Kirkuk, Iraq, is renewing friendships while on vacation in the United States.

CLAUDE B. BARRETT has been appointed manager of the southern territory, sales department, of the Texas Company, succeeding J. S. LEACH, recently appointed vice president. Mr. Barrett joined the Texas Company in 1927 as a salesman. He was appointed superintendent of sales in 1931, and a year later assistant manager of the Atlanta, Ga., sales district. He has served as manager of the Houston and Dallas sales districts in Texas, and more recently as assistant manager of the southern sales territory.

H. L. HUNT, Dallas, Tex., oil man, has spent part of August attending the race meeting at Saratoga Springs, N. Y.

HARVEY VAN ZANDT and JULIAN SMITH, geologists for the Eason Oil Company, Enid, Okla., are now working in Illinois.

DEWITT TAYLOR, geologist for the Shell Oil Company at Bakersfield, Calif., with MRS. TAYLOR and their three daughters, is at Laguna Beach, Calif., for his vacation.

A. D. GREENE, chief engineer of the United Gas Pipe Line Company, Houston, Tex., is spending two weeks on a vacation trip in Ohio and other middle western points.

VERNE AUSTIN, petroleum engineer for the California State Division of Oil and Gas in Bakersfield, left last week for Monterey, Calif., to attend the Reserve Officers training camp as major of cavalry.

W. EARL SHAMBLIN, district geologist for the Devonian Oil Company in southern Oklahoma, has recovered from illness and returned to his duties at headquarters in Holdenville.

GEN. W. B. PYRON, vice president of the Gulf Oil Corporation, Houston, Tex., was named chairman of the purposes and policies committee of the Texas Traffic Safety Association at a meeting of the group in Dallas last Thursday.

JOHN H. WELLER has resigned as production manager for the Barber Asphalt Co., Philadelphia, Pa., after 25 years of service with that organization. For six years Mr. Weller was in charge of the company's operations in Trinidad, British West Indies, and eastern Venezuela.

Rejoins Crown Central

In his 35 years' experience in the oil fields Blaine Johnston, newly appointed manager of the production and pipe line departments of the Crown Central Petroleum Corporation, Houston, Tex., has acquired a fund of technical knowledge that makes his counsel widely sought. He has been active in the work of the American Petroleum Institute since its organization. He was chairman of the Southwest district of the Institute for one year and for some time served as a member of the general committee.

Gittings

BLAINE JOHNSTON

Mr. Johnston's oil career began at Spindletop in 1903, and it has carried him through virtually every phase of production and transportation. After being broken in as a roustabout he displayed an aptitude that brought promotions with regularity. Soon he was in charge of production for the old White Oil Company and later he filled a similar position for Crown Central. From 1926 to 1930 he was in business for himself as a drilling contractor, actively engaged in Arkansas and Louisiana. From 1930 to 1935 Mr. Johnston was vice president of the Simms Oil Company, in charge of drilling and production. Following this he was general manager of the Johnston Oil Field Service Corporation, resigning to go back to Crown Central in his new post.

Mr. Johnston, who is a native Texan, originated many of the patented devices used in oil fields today. His work has taken him to almost every state in the Union.

HARRY LEYENDECKER, chief scout for the Tide Water Associated Oil Company in Houston, Tex., has returned to his desk after a vacation in Baltimore.

HOWARD JOHNSON, chief scout for the Oklahoma-Kansas-Illinois division of the Texas Company in Tulsa, is spending his vacation in Colorado Springs, Colo.

GORDON ATWATER, geologist for the Skelly Oil Company in Houston, Tex., has resigned to take a similar position with the William Helis Company, New Orleans, La.

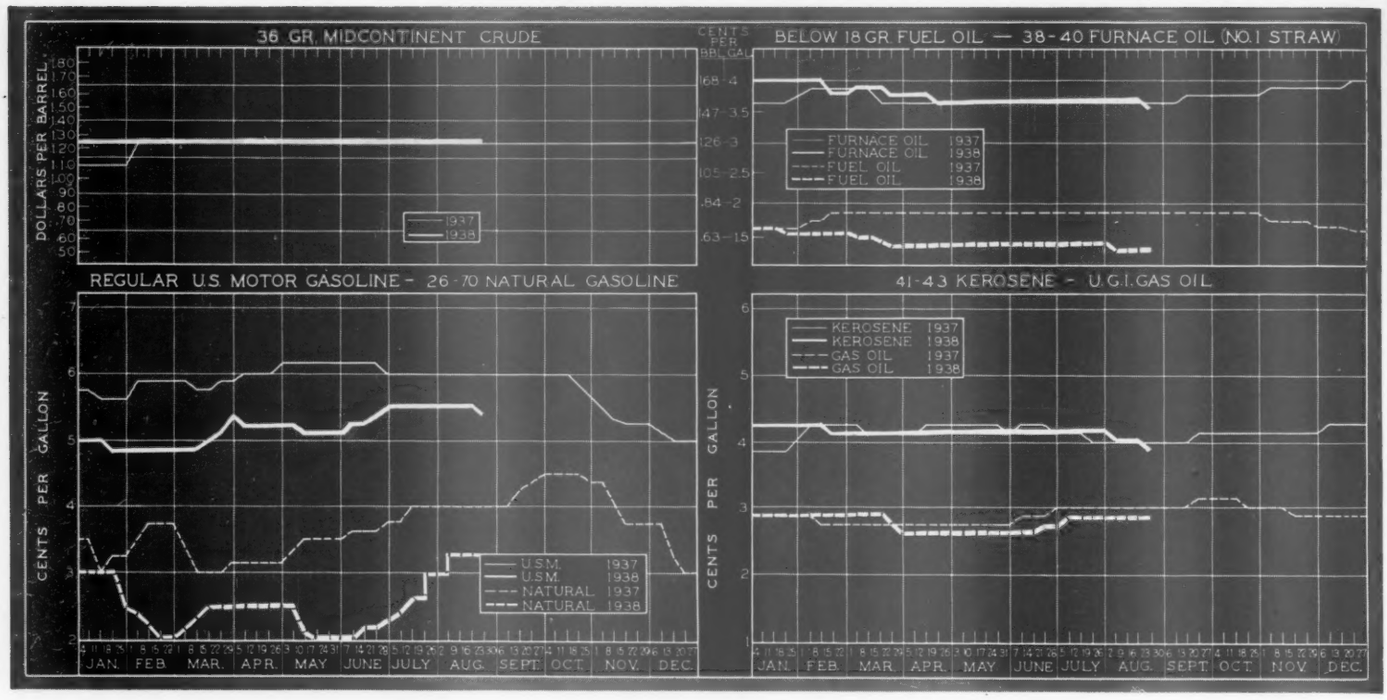
E. R. BROCKWAY, district geologist for the Devonian Oil Company in Shreveport, La., has been placed in charge of a new office opened by the company in Salem, Ill.

DUDLEY JOHNSTON, of the Atlantic Refining Company's geological staff in Tulsa, accompanied by MRS. JOHNSTON, left for Pittsburgh, Pa., last Friday on a vacation trip.

JACK FRAZIER, independent oil operator in Houston, Tex., accompanied by MRS. FRAZIER, is spending his vacation on the Pacific Coast, making motor trips out of San Francisco.

W. J. GODSMAN, Assam Oil Company, and G. R. NIXON, Burmah Petroleum Company, both of London, are visiting the United States, making a survey of refinery engineering developments and processing technique.

S. J. DICKEY, vice president in charge of manufacturing for the General Petroleum Corporation, California affiliate of Socony-Vacuum, has completed 20 years of uninterrupted service, having entered the employ of the company as a refinery engineer.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Drop in Gasoline Spreads Uneasiness in Oklahoma Refined Oil Market

By T. F. SMILEY

Cuts in the tankcar prices of all grades of gasoline left Group 3 refiners little to feel cheerful over this week. Operating for months on a profitless basis, they had looked hopefully to summer motoring demand to turn the tide. But from the outset the market's action was disappointingly slow, and late last week, at the very height of the heavy consuming season, prices, instead of advancing, tumbled. The unfavorable turn in motor fuel threw a shadow over other oil products, and almost all were either slipping or holding their place with difficulty.

Tank-Wagon Failure Stirs Fear

Collapse of the .3-cent tank-wagon advance in midwestern territory after just one week's trial injected a dash of pessimism into the market early this month, and this spread rapidly to the tankcar division. Jobber buying slowed up. Although few unwieldy refinery inventories in the Mid-Continent were apparent, offerings became more frequent. Refiners with limited storage facilities, noting their outlets were contracting, began to grant small concessions. The practice spread, and in a short time the whole tankcar market was headed downward.

Which way prices might move from their present level was a subject of discouraged speculation this week. The clouded crude situation added to the worries of the refinery market, and the movement of the country's gasoline stocks was not reassuring. It was conceded that if withdrawals from stocks should continue at the rate recorded since last March, there would be about the same quantity of gasoline in storage in October, 1938, that there was in that month last year. But rising plant operations seemed to make that consummation a remote possibility. It was pointed out that even drastic cuts in runs to stills would be too late now to achieve results of marked consequence, for the vacation season of 1938 is near its end, and consumption inevitably will begin to taper off.

Gasoline from North Louisiana and East Texas was seeking buyers in northern areas this week, enlarging the troubles of Group 3 refiners. Savage price-cutting among retailers contributed to the general nervousness.

A flicker of encouragement was seen by a few of the more optimistic sales managers in the fact that Labor Day, with its thick streams of motor cars on the highways over a three-day holiday, might spur gasoline demand sufficiently to steady the market and at least keep tankcar quotations from sliding lower.

Natural gasoline, infected by the sickness which gripped the motor fuel division, failed to maintain the upward course which it started in late July. Prices held, however, and manufacturers said there was no reason for expecting any shearing of quotations, though it was felt that the conditions which have developed might keep the naturals from reaching the price level formerly expected. Business for August shipment was slow, just enough orders coming in from day to day to keep stocks from growing. It was believed orders for September shipment might energize the market a little.

Agricultural Demand Slackens

The softening process which entered the Oklahoma refinery market extended to the tractor fuels, kerosene, and light distillates, though other factors than the decline in gasoline prices played a part here. Agricultural demand, especially important in this group, is experiencing its seasonal slackness. Harvesting operations, which draw heavily on the products named and on low-octane gasoline, are near their close. Fall plowing has not yet started. No. 3 burning oil continued scarce, and there was a place for every gallon. The light-gravity grades were off.

Neutrals and bright stocks were looking faintly better, chiefly because of the improvement in the position of the Pennsylvania products. U. G. I. gas oil was steady. Wax was firm.

Refined Oil Market Barometer

Contraseasonal weakness has developed in the gasoline market. Drastic cuts in plant operations are imperative; but as the vacation is near its end, such a remedial measure would fall short of a cure. Other divisions of the market, including tractor fuels, kerosene, and light distillates, are lagging, partly in sympathy with gasoline. The upward course of the naturals has been halted.

MID-CONTINENT. Gasoline weak. Kerosene, tractor fuels and light heating oils soft.

EAST COAST. Gasoline unsatisfactory. Fuel oil shows gradual improvement.

GULF COAST. Fuel oils fairly active. Gasoline weak. Prices steady.

CALIFORNIA. Gasoline inactive. Fuel oil weak. Diesel and gas oil soft.

PENNSYLVANIA. Gasoline lifeless. Bright stocks and neutrals up. Wax strong.

CHICAGO. Gasoline orders rising. Light burning oils and kerosene steadier.

Gasoline Soft on Eastern Coast Despite Heavy Consumption

By H. STANLEY NORMAN

NEW YORK, Aug. 22.—Despite the summer's heaviest motor fuel consumption brought about by record-breaking high temperatures, gasoline markets along the North Atlantic Coast continued last week to follow unsatisfactory trends. Some relief from depressed retail conditions in metropolitan New York was afforded by inclusion of more suppliers in the list using the Feld-Crawford Act to establish minimum resale prices.

Outside of metropolitan New York, however, in Westchester, Putnam and adjoining counties retail prices were slightly below New York City levels. In many Westchester County towns branded motor fuel was offered 5 gallons for 87 cents, including 5 cents per gallon taxes, leaving 12 2/5 cents per gallon for the refiner, the tank-wagon supplier and the service station operator. Even in New York City, where a majority of the major suppliers have entered into contracts with their dealers obligating the latter to maintain minimum retail price standards of 17½ cents per gallon on regular motor fuel and 19½ cents on premium gasoline, cut-price signs persist. There remain a few important suppliers who have not placed their dealers under minimum retail price contracts and cut-rate signs on third-grade gasoline exist in abundance.

Under the pressure of disturbed retail conditions in New York and a slight weakening of the cargo structure on the Gulf Coast, tankcar prices eased off in some parts of the Northeast last week. Gasoline of 65 octane was available in greater quantity last week to the tankcar trade in New York at 6½ cents per gallon and delivery by barges could be obtained at 6¼ cents. The current spot prices represent a slump of one-fourth of a cent from levels in what appeared to be a stable market in the latter part of July and the first half of August, although disturbances in the retail field have been in existence in New York for approximately two months.

Refiners supplying the New York trade deferred experiments with the Feld-Crawford Act as a means of protecting retail prices on trade-marked goods until after cutting had spread over a broad front. The immediate cause of the retail price nose-dive in New York was application of the New Jersey minimum resale law. With the New Jersey market at least partially blocked to the price traders, motor fuel seeking its own market level was dumped in New York with the inevitable result that prices here started tumbling. Richfield (Consolidated) and Gulf are the two outstanding suppliers in New York who have deferred application of Feld-Crawford contracts to their dealer outlets. In New York, Kings, Queens, Bronx and Nassau counties, the metropolitan area in which Feld-Crawford contracts have been applied, third-grade motor fuel is still offered at $1.05 for 7 gallons, or 15 cents per gallon, including taxes.

With Labor Day only two weeks ahead, motor fuel buyers are ordering supplies on a more conservative basis and paying more careful attention to inventories. There is no apparent slackening in the demand up to the moment. In fact, last week's three days of record-breaking or near-record temperatures for the summer season precipitated demand exceeding any comparable period this year. With temperatures of more than 100° prevailing at a number of New York, New Jersey, Pennsylvania, Connecticut and Delaware cities, the public was flushed to the seashore and mountain resorts in record-breaking numbers. All Manhattan beaches were packed with record crowds for the first three or four days of last week. During the final half of the past week temperatures moderated to some extent and mid-week travel returned to normal levels.

Price conditions in New Jersey are on a relatively satisfactory basis with a few exceptions, notably the areas around Trenton and Camden. In northern New Jersey most of the retail disturbance has been eliminated and business, both from a standpoint of volume and profit, is on a reasonably satisfactory basis.

The price range for cargoes of motor fuel on the Gulf Coast shows no quotable change, but there is more material available at the low of the spreads than formerly reported. The quotation of 5⅛ to 5⅜ cents per gallon for 65-67 octane motor fuel in cargoes of 20,000 or more gallons probably can be shaded by investigation of the market, according to New York buyers. It is also believed that a firm bid might shade the general quotation of 5 to 5¼ cents for 60-64 octane motor fuel.

Numerous potential buyers on the Gulf Coast are reported withholding their commitments for another week or ten days believing that the market may see further softening, if the current rate of runs to stills is maintained. Most of the uneasiness over tankcar prices in the New York oil circles is traceable to the current rate of refinery operations which have been stepped up in recent weeks, from 73.7 per cent of capacity at the end of June to more than 80 per cent for the week ended August 13.

Concern is still expressed over the current production rate, particularly in the more vulnerable areas of East Texas, North Texas and the Louisiana-Arkansas sector. Continued reduction of refinable stocks of crude oil above ground, however, has caused an increasing amount of criticism to be leveled at the refinery. It is admitted by observers that withdrawal of 1,000,000 or more barrels of motor fuel each week is reasonably satisfactory from a consuming standpoint for this season. It is the consensus of well-informed oil circles that the two or three weak spots in the production picture coupled with approach of Labor Day constitute a concern which is more serious in its potentialities than in reality. The hope is entertained in the Northeast that the production week in East Texas may be shortened, that restrictions in Arkansas may dam up what distress output exists there and that a satisfactory solution can be found for the K.M.A. situation before the summer season is definitely closed.

Fuel oil is gradually taking the market play from gasoline among jobbers. Activity in the retail field is dull in keeping with the season, but dealers are shopping around for over-the-winter supplies. Industrial fuel oil and heavy marine supplies have so far failed to share in the improved tone noted in the lighter fuels. Bunker C fuel oil is moving mostly at 95 cents per barrel in New York Harbor, but some of the spot business is being transacted at 85 and 90 cents per barrel. The lower prices are a reflection of the soft cargo market on the Gulf Coast where a firm bid of 62½ to 65 cents per barrel will attract suppliers. Shore plant prices for industrial fuel oil in the North Atlantic district range from 2 6/10 to 3 cents per gallon. Kerosene is not particularly strong in the New York tankcar and barge market, but the quoted price of 4¾ cents per gallon is unchanged from preceding weeks. Kerosene was reported down an eighth to a quarter of a cent per gallon to 4⅝

(Continued on Page 138)

A. P. I. Weekly Refinery Statistics

Week Ending August 20, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	511,000	19,900,000	14,642,000
Appalachian	88.4	107,000	3,119,000	1,059,000
Indiana, Illinois, and Kentucky	92.4	410,000	11,536,000	9,334,000
Oklahoma, Kansas, and Missouri	84.7	279,000	6,405,000	4,342,000
Inland Texas	56.6	145,000	2,102,000	2,006,000
Texas Gulf	95.7	763,000	9,509,000	12,884,000
Louisiana Gulf	96.6	123,000	2,164,000	3,382,000
North Louisiana and Arkansas	63.7	42,000	558,000	856,000
Rocky Mountains	69.7	56,000	1,333,000	814,000
California	90.9	510,000	12,423,000	94,871,000
Total reported	89.0	2,946,000	69,049,000	144,190,000
Estimated unreported	.....	319,000	3,660,000	2,990,000
*Estimated total	.....	3,265,000	72,709,000	147,180,000
*Estimated total, previous week	.....	3,295,000	74,387,000	146,261,000
*August 21, 1937	.....	3,415,000	67,260,000	110,493,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending August 6, 1938	287,406,000 barrels
Week ending July 30, 1938	288,514,000 barrels
Week ending August 7, 1937	307,922,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of August 23, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Dlr	Inc. tax	Kero. tank wag.
Chicago, Ill.	15.6	13.6	4.0	10.5
Decatur	15.6	14.1	4.0	10.5
Joliet	15.6	14.1	4.0	10.5
Peoria	15.6	14.1	4.0	10.5
Quincy	15.4	13.9	4.0	10.3
Davenport, Ia.	15.6	14.1	4.0	‡10.5
Des Moines	15.4	13.9	4.0	‡10.3
Mason City	15.8	14.3	4.0	‡10.7
Duluth, Minn.	17.4	15.9	5.0	11.3
Mankato	17.0	15.5	5.0	10.9
Minneapolis	17.0	15.5	5.0	10.9
LaCrosse, Wis.	17.0	15.5	5.0	10.9
Green Bay	17.4	15.9	5.0	10.3
Milwaukee	16.8	15.3	5.0	10.7
Detroit, Mich.	14.3	12.8	4.0	9.0
Grand Rapids	14.8	13.8	4.0	9.
Saginaw	16.3	14.8	4.0	9.3
Evansville, Ind.	17.1	15.6	5.0	†11.0
Indianapolis	17.3	15.8	5.0	†11.2
South Bend	17.6	16.1	5.0	†9.0
Fargo, N. Dak.	17.2	15.7	4.0	12.1
Minot	18.5	17.0	4.0	13.4
Huron, S. Dak.	17.5	16.0	5.0	11.4
Kans. City, Mo.*	14.9	13.4	4.0	8.5
St. Louis*	15.2	13.7	4.0	10.1
St. Joseph*	14.9	13.4	4.0	9.8
Wichita, Kans.	14.4	10.6	4.0	7.8

***State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.**

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective August 1, 1938, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8.5 cents; 150 gallons and over, 8 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex furnace oil, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex grade A, 1-399 gallons, 5 cents; 400 gallons and over, 4 cents. Stanolex grade B, 1-799 gallons, 5 cents; 800 gallons and over, 4 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
Atl'tic City, N. J.	13.4	11.4	4.0	8.0
Newark	13.4	11.4	4.0	8.0
Annapolis, Md.	14.85	13.35	5.0	9.5
Baltimore	14.25	12.75	5.0	9.0
Cumberland	16.65	14.15	5.0	10.0
Wash'g'n, D. C.	12.5	11.0	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.8
Charles'n, W. V.	17.05	14.55	6.0	12.6
Parkersburg	15.35	13.85	6.0	11.2
Wheeling	16.25	14.85	6.0	12.2
Charlotte, N. C.	18.65	16.15	7.0	12.1
Hickory	19.15	16.65	7.0	12.5
Mt Airy	18.95	16.45	7.0	12.3
Raleigh	18.25	15.75	7.0	11.6
Salisbury	18.75	16.25	7.0	12.2
Charleston, S. C.	17.25	14.75	7.0	10.6
Columbia	18.25	15.75	7.0	11.6
Spartanburg	18.95	16.45	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank-wag	Net dlr.	Inc. tax	Kero. tank-wag
Atlanta, Ga.	19.0	16.0	7.0	12.0
Augusta	19.5	16.5	7.0	11.5
Macon	21.0	18.0	7.0	11.5
Savannah	19.5	16.5	7.0	10.0
Birm'ham, Ala.	21.5	18.5	8.0	12.0
Mobile	21.5	18.5	9.0	9.0
Montgomery	21.5	19.5	9.0	11.5
Jackson, Miss.	19.5	16.5	7.0	10.0
Vicksburg	20.0	17.0	7.0	9.5
Jacks'ville, Fla.	20.5	17.5	8.0	8.0
Miami	20.5	17.5	8.0	9.0
Pensacola	21.0	18.0	9.0	10.0
Tampa	20.5	17.5	8.0	8.5
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	18.0	15.0	6.0	10.5
Louisville	19.0	16.0	6.0	10.0
Paducah	16.5	13.5	6.0	10.0

*Includes 1-cent state tax.

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallon discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham Ala. has a city gasoline tax of cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank wag
Denver, Colo.	15.5	5.0	11.5
Grand Junction	19.0	5.0	15.0
Pueblo	16.5	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	13.0	5.0	13.0
Butte, Mont.	19.5	6.0	15.5
Billings	19.5	6.0	13.0
Helena	20.0	6.0	15.5
Great Falls	19.0	6.0	15.5
Salt Lake City, Utah	18.0	5.0	16.0
Twin Falls, Ida.	21.0	6.0	18.0
Boise	21.5	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of .5 cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag. con'r.	Divided dlr	Inc. tax	Kero. tank-wag.
Ohio points	16.5	15.5	5.0	*13.0

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Tank-wag.	Tank-car	Inc. tax	Kero. tank wag.
Albany, N. Y	14.5	12.5	5.0	9.0
*Met. N. Y.:				
M'htt'n, Br'nx	14.0	12.5	5.0	8.75
Staten Island	14.0	12.5	5.0	8.75
Q'ns & Bklyn.	14.0	12.5	5.0	8.75
Buffalo	14.5	13.4	5.0	7.5
Rochester	15.3	13.5	5.0	8.5
Syracuse	14.5	13.1	5.0	9.0
Boston, Mass.	13.0	12.0	4.0	8.5
Portland, Me.	15.0	13.0	5.0	8.75
Manch'ter, N.H.	15.0	13.6	5.0	9.0
Burlington, Vt.	15.4	13.4	5.0	9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Serv. sta.	Inc. tax	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nav.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Dlr.	Inc. tax	Kero. tank wag.
Omaha	18.0	16.5	6.0	10.8
McCook	17.5	16.5	6.0	10.0
Norfolk	18.4	14.9	6.0	11.2
North Platte	18.4	15.4	6.0	11.0
Scotts Bluff	19.5	14.4	6.0	12.3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag
N. Oleans, La.	19.75	17.25	*10.0	†13.5
Baton Rouge	17.75	15.25	8.0	12.5
Alexandria	17.75	15.25	8.0	12.5
Lafayette	18.0	15.5	8.0	12.5
Lake Charles	17.75	15.25	8.0	12.5
Shreveport	16.5	14.0	8.0	11.0
Kn'ville, Tenn.	21.0	18.5	8.0	14.5
Memphis	19.0	16.5	8.0	12.5
Chattanooga	20.5	18.0	8.0	14.0
Nashville	20.0	17.5	8.0	13.5
Bristol	21.25	18.75	8.0	15.0

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
Philadelphia, Pa.	13.75	12.25	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	....	5.0	10.5
Wilmington	12.5	....	5.0	9.75
Springf'd, Mass.	13.5	....	4.0	8.0
Worcester	13.0	....	4.0	8.5
Hartford, Conn	13.6	....	4.0	7.0
New Haven	13.5	....	4.0	7.0
Providence, R. I.	13.0	....	4.0	8.0

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank-wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	13.5	5.0	7.0
Tulsa	12.0	5.0	7.0
Ft. Smith, Ark.	14.75	5.0	7.5
Little Rock	17.25	7.5	8.0
Texarkana	14.0	5.0	8.0

Texas

	Gasoline Tank-wag.	Serv. sta.	Inc. tax	Kero. tank wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

***Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.**

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	24.5	10.0	18.8
St. John, N. B.	24.5	10.0	18.8
Montreal, Que.	21.0	6.0	17.8
Toronto, Ont.	22.0	6.0	17.0
Hamilton, Ont.	22.0	6.0	17.0
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.3
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Nebraska) August 11 reduced dealer gasoline in Norfolk 2 cents.

Standard Oil Co. of Louisiana August 15 advanced tank-wagon kerosene 1.5 cents in Shreveport; August 17 advanced tank-wagon kerosene .5 cent in Baton Rouge, Knoxville, Memphis, Chattanooga, and Bristol; 1.5 cents in New Orleans; 2 cents in Alexandria; 3 cents in Nashville.

Used Cars Dodge Junk-Pile

A 10-year low was hit in 1937 in the percentage of trade-in used cars junked by automobile dealers, according to the National Association of Sales Finance Companies. In 1937 only 7.7 per cent of trade-ins were junked, the lowest since 1927. In the four depression years, 1930 to 1933, 13 to 14 per cent of the trade-in cars were junked by dealers. In 1934 the junkers dropped to 8.1 per cent. In 1935 they stood at 8.9 per cent and in 1936 at 10.8 per cent.

Convicted of Tax Evasion

Eleven persons were convicted on charge of gasoline tax evasion in the states of Colorado, Kansas, Minnesota, Missouri and South Dakota during the month of July, reports the Central Gasoline Tax Evasion Committee, with headquarters in Chicago. In addition, $141,186 was collected in eight middle western states in civil actions involving evasion of gasoline taxes.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of August 23, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.04⅝	.04¾
63-66 octane	.04⅞	.05
67-69 octane	.05⅛	.05¼
70-72 octane (regular)	.05⅜	.05½
60-62 400 grades:		
62 oct. and below	.04⅝	.04¾
63-66 octane	.04⅞	.05
67-69 octane	.05⅛	.05¼
70-72 octane (regular)	.05⅜	.05½
64-66 375	.04¾	.04⅞
68-70 360	.05	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04⅝	.04¾
63-66 octane	.04⅞	.05
67-69 octane	.05⅛	.05¼
70-72 octane (regular)	.05⅜	.05½
60-62 400	.04⅝	.04¾
64-66 375	.04¾	.04⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and bleow		.04¾
63-66 octane		.05⅛
67-69 octane	.05¼	.05⅜
70-72 octane (regular)		.05¾

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below		.05
67-69 octane		.05½

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04⅝	.04⅞
63-66 octane	.04⅞	.05⅛
67-69 octane	.05⅛	.05⅜
70-72 octane (regular)	.05⅜	.05⅝
60-62 400 grades:		
62 octane and below	.04⅝	.04⅞
63-66 octane	.04⅞	.05
67-69 octane	.05⅛	.05⅜
70-72 octane (regular)	.05⅜	.05⅝
64-66 375	.04¾	.05
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04¾	.05
65 octane	.07	.07¼
68-70 octane	.07¼	.07½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07	.08¼
58-60 400, 65 oct. and higher	.08	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06¼	.06½
Philadelphia	.06¼	.06½
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06¾	.07
Philadelphia	.06¾	.07
Boston	.06¾	.07
Baltimore	.06¾	.07¼
Charleston, S. C.	.07¼	.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05	.05⅛
60-64.9	.05⅛	.05¼
65 octane and higher	.05⅜	.05½
68-70	.05¾	.06

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¾	.04⅞

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.03¼
Grade 18-55	.03⅝	.03¾

NORTH TEXAS—

Grade 26-70		.03¼
Grade 18-55	.03⅝	.03¾

CALIFORNIA—

75-85 375-390	.06¼	.07

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.03½

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03⅞	.04
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.04⅛	.04¼
46-48 gr., 210-230 i.b.p., 480 max., e.p.	.04½	.04¾

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅞	.04
42-44	.04⅛	.04¼

NORTH TEXAS—

41-43	.03⅞	.04

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04⅛	.04⅜

ARKANSAS (Ark. and N. La. del.)—

41-43	.04½	.04⅝

PENNSYLVANIA (inland refineries)—

45	.04⅞	.05
46	.05	.05⅛
47	.05⅛	.05¼

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04⅜
42-44	.04⅜	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05	.06

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04¾

***GULF COAST (domestic)—**

41-43	.03⅞	.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03¾	.03⅞
No. 1 prime white, 38-42	.03⅝	.03¾
No. 1 straw, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03⅜	.03½
No. 3 zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42		.03¾
No. 1 straw, 38-40	.03⅜	.03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03½	.03¾
No. 2 dark, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.00	1.10
No. 5, low cold test, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.80	.82½

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅞	.03
No. 4, low cold test, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low cold test, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low cold test, 16-10	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.03⅝	.04

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.20	1.40
24 plus Diesel, per bbl.	1.10	1.40
24 plus Diesel (bunkers)	1.25	1.55
12-16 (bunkers at tidewater)	.80	.90
10-16 (cargo lots)	.65	.85
12-17 (tankcars)	.60	.90
10-17 (high sulfur)	.55	.85
San Joaquin Valley:		
10-18 (tankcars)	.60	.80
24 plus Diesel, per bbl.	1.20	1.50
San Francisco:		
24 plus Diesel, per bbl.	1.45	1.55
24 plus Diesel (bunkers)	1.50	1.55
10-16 (bunkers)		.95

GULF COAST—

No. 2 fuel		.03½
43-47 Diesel		.03½
48-52 Diesel	.03½	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunkers (bulk cargoes)	.62½	.67½
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¼
28-30 Diesel (lighterage 6¼c per bbl.)		1.75
28-30 Diesel (tankers)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)	.03¾	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05½

PENNSYLVANIA—

Bright stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.16¼	.17
15 pour test	.15½	.16
20 pour test	.14½	.15
25 pour test	.13½	.14
Steam refined:		
600	.08	.08½
650	.10	.10½
600 Pennsylvania flash	.10½	.11
630 flash	.13½	.14
600 Warren E filtered	.12½	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 cold test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07⅛
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¾	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
300-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° color, 400-405 flash:		
Zero pour test	.16	.16½
10 pour test	.15	.15½
15 pour test	.14	.14½
25 pour test	.13	.13½
200 vis. at 70° F., 3 color:		
Zero pour test	.17	.17½
10 pour test	.16	.16½
15 pour test	.15	.15½
25 pour test	.14	.14½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¼	.02½

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0235	.0245
124-126 (a.m.p.) w.c. scale	.0235	.0245

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0420
125-127 (a.m.p.) wax		.0435
128-130 (a.m.p.) wax		.0445
130-132 (a.m.p.) wax		.0455
133-135 (a.m.p.) wax		.0500
135-137 (a.m.p.) wax		.0515
124-126 (a.m.p.) y.s.		.0185
124-126 (a.m.p.) v.s.		.0185
Petrolatum in barrels, carload lots:		
Dark green	.02	.02⅛
Amber	.02⅜	.02½
Extra amber	.02⅝	.02¾
Lily white	.05½	.05¼
Snow white	.06⅛	.06¼
Cream	.04⅛	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05
60-62-400	.05	.05⅛
61-63 390	.05⅛	.05¼
64-66 375		.05½

LOS ANGELES—

U. S. Motor grades:		
55-65 octane		.05
65-69 octane		.05¼
Above 69 octane		.05½

KEROSENE

GULF COAST—

41-43 prime white	.03⅞	.04
41-43 water white	.03⅞	.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15⅛
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.o.		.0375
125-127 a.m.p.		.0387
128-130 a.m.o.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0185	.0200
124-126 y.s.	.0185	.0200

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (May 22, 1937)*	$1.35
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light (July 8, 1938)*†	1.05
Grass Creek, Wyo., heavy (May 1, 1938)*	.50
Hamilton Dome, Wyo. (May 1, 1938)*	.45
Elk Basin, Wyo., light (July 8, 1938)*†	1.05
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light (May 1, 1938)*	.65
Hogback, N. M. (Jan. 28, 1937)*	1.33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 2, 1937)‡	.90
Maljamar, N. M. (Jan. 28, 1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.*	.97
Lander, Wyo. (Jan. 1, 1938)§ *	.51¼
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	1.30
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. and Ohio Oil Co. †Ohio Oil Co. ‡Continental Oil Co., Texas Co. (April 1, 1938). §Hudson Oil Co.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.00
Centralia, Ill. (Aug. 8, 1938)‡	1.10 to 1.25
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich. (Aug. 9, 1938)†	.90
Buckeye (Jan. 8, 1938)	1.09½
Arenac, Mich. (Dec. 29, 1937)†	.80
Freeman-Redding (Mich.)	1.09½
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (July 1, 1938)	1.32
Kentucky River (July 1, 1938)	1.40
Western Kentucky (June 22, 1938)	1.30

*Posted by Pure Oil Co. †McClanahan P. L. and Simrall. ‡Posted by Owensboro Oil Corp. (Standard of Ohio).

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

West Texas

See gravity table.

Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Eastern States

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.
(Effective June 13, 1938)

Bradford, Pa.	$1.80
Allegany, N. Y.	1.80

SOUTH PENN OIL CO.
(Effective June 13, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	$1.80
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.46
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.40
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.30
Corning Grade Oil in Buckeye Pipe Line Co. line (June 16, 1938)	1.17

PENNZOIL CO.
(Effective June 13, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	$1.73
Includes Cochran, Franklin, Hamilton and Doolittle district.	
Group B	1.72
Includes Tidioute district.	
Group C	1.71
Includes Turkey and Tidioute districts.	
Group D	1.70
Includes Bear Creek and Porkey districts.	
Group E	1.68
Includes Eideneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

PURE OIL CO.
(Effective June 13, 1938)

Cabin Creek, W. Va.	$1.40
Bradford Hollow, W. Va.	1.40
Kelly Creek, W. Va.	1.40

Southwest Texas

(Effective January 28, 1937)

Pettus	$1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Lytton Springs	1.12
Luling	1.00

Saxet and Taft take same gravity table as Gulf Coast.

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17
TURNER VALLEY NAPHTHAS AND CRUDE OIL	
(January 5, 1938, by Imperial Oil, Ltd.)	
Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

To End Diversion

A resolution urging the adoption of an amendment to the state's constitution to prevent the misuse of the automotive tax funds has been adopted by the Massachusetts Federation of Labor. John F. Gateleo, retiring president of the federation, said an amendment to the constitution is the only way to put an end to the misappropriation of road funds and to stop automotive taxes being used as a political football.

Capture 3,000 Snakes

In a drive to make the oil fields safe, employes of a petroleum company at Breckenridge, Tex., have carried on a snake-hunting drive which has resulted in the capture of some 3,000 snakes, chiefly rattlers.

New York Market

(Continued from Page 135)

cents in some Pennsylvania refining centers.

Tankcar quotations of 4¼ cents per gallon by the large suppliers of No. 2 and No. 3 fuel oil in the New York, Philadelphia and Baltimore districts are unchanged from the preceding week. The interest currently manifested in light fuel oils indicates that the seasonal upswing in activity of this market is in early stages and further progress may be anticipated as fall months approach.

Lubricating oils are slightly more active in the Pennsylvania market with some refiners elevating neutral prices a half to a cent per gallon on certain grades. Neutral of 25 pour test, 150 viscosity is generally quoted by Pennsylvania refiners at 12½ to 13 cents per gallon, while the 200 viscosity grade is held at 13½ to 14 cents with the trend to the high side of the range.

The wax market in Pennsylvania and on the eastern seaboard is also on the bullish side. No changes have been reported in the past week in the general price range, but supplies are in strong hands and sales in the spot market and shipments against contracts have picked up materially during the past three or four weeks. Crude scale wax prices are generally quoted between the range of 2¼ and 2.35 cents, although movement is admittedly light from plants on the high of the bracket.

Crude Prices by Gravities

	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	Gulf Coast	Gulf Coast	Lea County, N. Mex. West Texas except Pecos County	Mirando district, Texas	Marion County, Texas	Refugio, Greta, Saxet, Taft, Texas	Anahuac, Flour Bluff, Dickson, Turtle Bay	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18	....	....	....	....	....	....	....	....	....	$.95	....	....	....	....	....	....	....	$.90	....
18-18.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	$.94	.94	....
20-20.9	....	....	....	....	....	....	....	....	....	.95	$.95	....	$.96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.98	....	1.03	....	.98	.98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1.01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1.04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Bel. 25	....	$.88	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$.88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$.78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel. 29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	$.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.88	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Effective July 8, 1938, Standard Oil Co. of Louisiana posted prices in Buckner, Magnolia, and Village pools in Columbia County, Arkansas, as follows: Below 25 degrees 83 cents; 25-25.9 degrees 85 cents; with 2 cents added for each degree upward to and including 40 degrees and above at $1.15.

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.

Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.

Column 3—All purchasers.

Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.

Columns 5, 6, 7 and 8—All companies. Effective July 8, by Standard Oil Co. of Louisiana, Buckner, Magnolia and Village, Arkansas, 7 cents per barrel less than prices in Column 5.

Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)

Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)

Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co. Column 12—All purchasers. Column 13—All purchasers (effective July 6, 1937). Column 14—Magnolia Petroleum Co. Column 15—Humble Oil & Refining Co. (effective July 6, 1937). Column 16—Humble Oil & Refining Co. Columns 17 and 18—Shell Petroleum Corp. Column 19—Tide Water Oil Co.

New or Improved Equipment

Full-Vision Gas Mask Designed for Use in Poisonous Airs

The Acme Protection Equipment Co., 3603 Liberty Avenue, Pittsburgh, Pa., manufacturer of Acme Full-Vision gas masks, is introducing a sup-

plemental line of hose masks (fresh-air type) which have been approved by the U. S. Bureau of Mines. These new masks are designated as Acme Full-Vision Supplied-Air respirators. At the same time the manufacturer announces that Bureau of Mines approvals have been granted for Acme Full-Vision gas masks Nos. 4 and 4A when equipped with Type 1-OV canisters.

Acme Supplied-Air respirators are used by workmen who must enter high concentrations of poisonous gas or oxygen-deficient places, such as oil tanks, tankcars, vats, underground passageways, sewers, around blast furnaces, etc. A blower, mounted in a substantial fiber trunk, which is placed outside the danger zone, is used to furnish the wearer of the mask with cool, fresh air. Full-vision lenses permit the wearer to work safely and effectively and to see as well as when not wearing a mask. Informative literature is available.

Here and There With Men Who Manufacture Equipment

L. Sonneborn Sons, Inc., New York, has transferred its interest in Porocel to Porocel Corp., a new organization created by American Cyanamid & Chemical Corp. and Attapulgus Clay Co., the latter to act as sole agent for Porocel.

———

Walter G. Heacock, for 10 years sales manager for Air Maze Corp., Cleveland, Ohio, has resigned to become Michigan representative for Standard Electric Time Co., Springfield, Mass. His headquarters will be in Detroit. H. H. Schaaf, son of the president of Air Maze, succeeds to Mr. Heacock's former post.

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Bay State Iron Works Corp., Erie, Pa., is rebuilding its engineering and purchasing file, and invites literature of interest to the company as engineers and manufacturers of engines, air-compressors and general machinery equipment.

———

Byron Jackson Co. has opened a branch office of its pump division at 407 South Dearborn Street, Chicago, in charge of J. J. O'Connor. It has established a similar branch in the Gulf Building, Pittsburgh, Pa., with Murray Russell in charge. Lynn Sawyer, formerly in charge of the district office, Fort Worth, Tex., has been made district manager of the New York office. Ed Upton, formerly connected with the New York and Chicago offices, has assumed charge of the Fort Worth office.

———

Frank Wheatley, of Wheatley Bros. Pump & Valve Manufacturers, who is making a trip around the world, accompanied by Mrs. Wheatley and their son, writes from Sydney, Australia, there is going to be a big oil boom in Australia, that they are now starting to drill and put up tanks.

———

M. O. Johnston has taken over a controlling interest in and management of Gas Lift Corp., Dallas, Tex., manufacturer and distributor of Bryan flow valves and drop valves and the Bryan bottom-hole gas-lift pump. There will be no change in the active personnel of the organization.

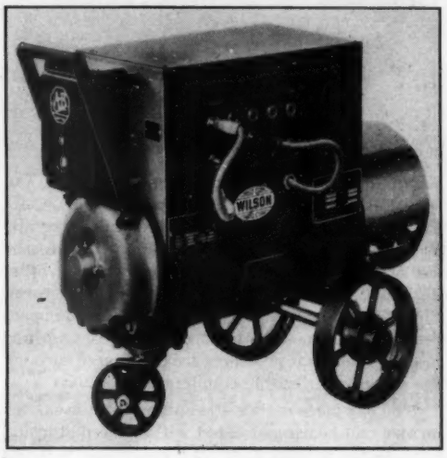
Portable Pressure Gauge Fills Needs of Natural Gas Lines

To meet the requirements of natural gas companies, the Meriam Co. of Cleveland, Ohio, has produced a portable mercury pressure gauge for field use. This gauge, used to check and measure gas pressures on large mains, is easily carried from one pipe line to another.

Of well-type, single-tube construction, the gauge reads directly in pounds and tenths of pounds. To assure light weight with strength, the channel body is formed of aluminum. For maximum durability under rough field service, an unbreakable, clear "Pyralin" tube is gland-packed in the channel directly above the aluminum scale. Sturdy legs hold the instrument in an upright position. An adjustment unit enables the operator quickly to set scale to zero. The Meriam portable mercury pressure gauge is built in scale ranges to meet individual requirements.

New Model Welder Is Added to Wilson's Line of Machines

Wilson Welder & Metals Co., Inc., 60 East Forty-second Street, New York, has announced an addition to its line of machines, the Model



SC, single-operator, 100-ampere motor-generator arc welder. The machine is compact and is designed primarily for light gauge work, operating on the thinnest material that can be arc-welded. The company calls attention to the following features:

(1) The adjustment of the output of the generator is accomplished by five marked receptacles with plugs for current or heat control and a multipoint field rheostat for adjustment of the open-circuit voltage. (2) The generator, of special design, will provide unvarying welding heat. (3) The rheostat is equipped with a dial and pointer so that the machine can be reset easily for any previously used current valve.

AXELSON REPRESENTATIVES TALK OVER SALES PLANS

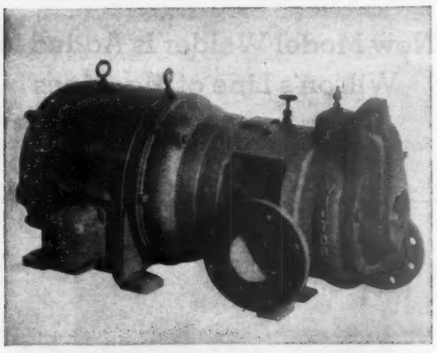
Sales plans and promotional strategy were discussed in an all-day sales meeting held recently by California sales representatives of the Axelson Manufacturing Co. at the Los Angeles plant. Particular stress was laid on closer tie-in with publication and direct-mail advertising, in which, incidentally, Axelson was awarded first place at the P.A.C.A. convention in Los Angeles last June.

J. C. Axelson, president of the company, in explaining recent developments said: "Axelson has always endeavored to prepare information on our products in such a way that it will be of genuine interest and information to purchasing agents, engineers, and oil-field superintendents. I feel that in the new series of bulletins just issued we have carried this accepted policy a step forward. Our board of directors is pleased with the way in which sales have held up during the first half of this year, and anticipate steadily improving conditions."

Sales meetings similar to that held in Los Angeles are being scheduled for Axelson representatives in other oil-producing areas of the world. In the picture are K. S. Ramey, W. H. Getsinger, M. R. Conger, P. E. Humphreys, H. F. Donley, W. H. Jackson, W. F. Goertz, E. F. Green, E. J. Phillips, C. E. Rose, A. G. Haglund, A. Zwerneman, C. J. Huyck, H. S. Kelley, S. Morrish, E. W. Ostrom, and R. M. Humphreys.

Two-Stage "MKE" Pumps Any Liquid Against High Head

A two-stage, multiple-duty, high-pressure type MKE pump, capable of pumping any liquid against high heads, has been announced by the Kimball



Krogh Pump Division of Victor Equipment Co., 1010 East Sixty-second Street, Los Angeles, Calif. The two-stage pump and motor are built integrally as a unit and mounted on a common shaft for installation vertically, horizontally or in any other desired position. According to the manufacturer, the installation occupies only about half the space required by a conventional multistage pump and motor. Alignment problems are eliminated through the absence of flexible couplings.

The one-piece carbon-steel pump-shaft is carried on two ball bearings located within the motor and is protected against wear by a removable wearing sleeve. Instant access to wearing parts is possible without breaking either suction or discharge connection. Standard capacities are from 75 to 1,000 g.p.m. at heads from 200 to 800 feet, but the head capacity may be increased, when necessary, to specification. Complete mechanical specifications, a table of capacities, and other data on this new pump are given in Bulletin 150, obtainable from the manufacturer.

Tool for Measuring Right-Hand Turning Torque Introduced

A simple tool for measuring right-hand turning torque has been announced by J. H. Williams & Co., 75 Spring Street, New York. Known as Williams' torque "Measurrench" No. B-21, this new tool is equipped with various sizes of detachable socket bits, for servicing hollow screws having one-eighth- to five-sixteenths-inch hex drive-opening. Its purpose is to enable the operator to avoid injury to hollow screws and to socket bits by overtightening. The "Measurrench" is calibrated with numbers corresponding to numbers of the various size bits which it accommodates. When the index line on the bar touches the line indicating the piece number of the Williams' bit in use, the proper load has been applied to the hollow screw.

Since the head may be moved along the bar, this tool may be transformed instantly into a conventional sliding T handle and used without the measuring feature.

Exclusive Features Embodied in New Jenkins Gate-Valve

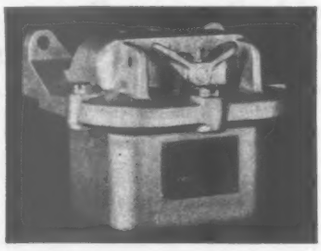
Jenkins Bros., 80 White Street, New York, has announced new bronze-mounted and all-iron U-bolt gate-valves described as the result of an effort to improve the design and construction of this type of valve. This type of valve combines quick, easy disassembly for inspection or repair, with high resistance to springing and distortion.

Jenkins says its new valve not only possesses all standard features of merit, but also exclusive features. One of the advantages is a renewable bonnet-saver bushing. This makes it unnecessary to junk the valve bonnet when operating threads are worn. By slipping a new bushing into position the user obtains new thread engagement in the same old bonnet. Another advantage is that because this bushing can be lifted out, the user can get into the upper part of the bonnet-chamber to do a thorough job of cleaning out any deposits that form there.

The manufacturers say the heavy-duty body and bonnet employed will not break even if the nuts on the U-bolt are tightened to a point that would cause the high-tensile steel U-bolt to break.

Pushbutton Station Is Designed for Corrosive Atmospheres

A new line of heavy-duty Type HD pushbutton stations, suitable for use in corrosive atmospheres and in Class I Group D hazardous locations, has been designed by Westinghouse Electric & Manufacturing Co. in accordance with the requirements of the Underwriters' Laboratories. The stations are explosion-proof either with or without

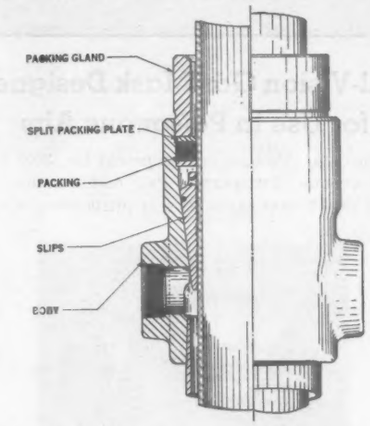


oil in the station. They are available with one to four standard pushbutton units of the momentary-contact type, or with maintained-contact units.

In addition, stations are available with two- or three-position selector switches, which are available either as single-pole, double-throw switches or double-pole, single-throw switches. The stations are of high-grade cast iron, and all bolts, shafts and fittings are of corrosion-resisting copper alloy.

National Offers Casinghead for Medium-Pressure Service

The National Supply Co. has recently introduced the Type KH-1 casinghead for medium-



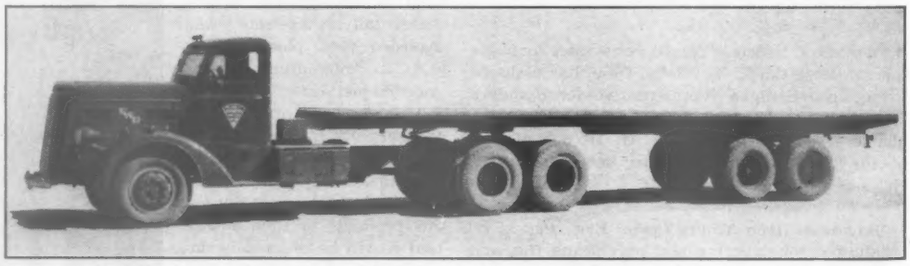
pressure service. This head is of the slip suspension type, which permits settling casing at any depth without cutting special casing nipples. One large packing packs off the area between the body and the inner string. This is located above the slips and is entirely independent of the weight of the casing. The packing gland will pass over casing couplings, making it unnecessary to remove the coupling in order to install the packing. This packing is confined between split packing plates and is of neoprene which is not decomposed by oil.

Atlas and M.I.W. Unite Facilities

Two pioneer Mid-Continent oil equipment concerns, established more than a quarter of a century, announce an arrangement whereby they expect to improve their service. Muskogee Iron Works felt the need of better distribution of its line of pumping units. Atlas Supply Co. desired to be closer to the source of manufacture on this type of equipment. By a combination of the manufacturing facilities of M.I.W. with the distributing, sales and service organization of Atlas Supply, the ends sought have been accomplished. Since the headquarters of both companies are in Muskobee, Okla., quick service is assured.

FWD TRUCK IS VERSATILE UNIT IN THE OIL FIELD

The adaptability of FWD trucks for many phases of oil production service, is again exemplified in the Model T-40 truck with semi-trailer, owned by the Superior Oil Co., of Los Angeles, Calif. A versatile trucking unit, it is used principally for hauling pipe and other oil-



field supplies between Torrance and Bakersfield, approximately 145 miles. Thirty-five miles of this distance is over the Ridge route, a long grade, having grades up to 5 per cent. Its average running time over the entire 145-mile haul is 7½ hours.

As is standard FWD practice, this truck always drives on the front and forward rear axle, but it is quickly convertible to six-wheel drive by use of roller chains and sprockets between the dual tires of the bogie.

The flat-bed trailer is of special design, 33 feet long by 95½ inches wide. The axles of the trailer are adjustable to a distance of 10 feet. Thus the axles are always close to the center of the load, whether hauling long pipe, with trailer fully extended, or hauling heavy concentrated load, with trailer short-coupled.

On the open highway this combination truck and trailer unit will haul a 17½-ton payload and still comply with the California law limiting vehicles to 60,000 pounds gross. In the oil fields the unit is used for moving drilling rigs, and frequently drawworks weighing 25 tons are hauled.

Abercrombie Pressure Gauge Built for Wide Range of Use

Abercrombie Pump Co., Gulf Building, Houston, Tex., manufacturer of the fluid-piston slush-

pump and shear-relief valve, is in full production on the Abercrombie pressure gauge, following rigid field tests.

This new gauge, for mud, water, oil, air, gas, or any liquid, covering slushpump service, gathering-line or pipe-line service, and christmastree installations on flowing wells, is built on a new principle. It employs no Bourdon tube, is built of rugged parts operating on roller bearings, and offers long-life sensitivity and accuracy. All internal parts operate in oil to assure the cushioning of the gauge mechanism against external shocks and vibrations and resistance to corrosion and wear.

The self-contained diaphragm keeps the line fluid from entering any part of the gauge mechanism, an essential requirement of any gauge measuring drilling-mud pressures. The self-contained dampening mechanism, which requires no adjustment over the entire pressure range, is designed to give uniformly steady pressure readings where reciprocating pumps are in use.

The Abercrombie pressure gauge may be read easily across the derrick floor and at distance up to 30 feet, large scale.

Bulletins, Booklets and Other Literature for the Trade

Users of cast iron will profit by a study of the data sheet on gray cast iron offered by the International Nickel Co., Inc., 67 Wall Street, New York.

A bulletin prepared for distribution by the Oil Well Supply Co. illustrates and describes two sizes of "Oilwell" swivels, including the new 150-B.

The advanced Hobart Multi-Range arc welder is pictured and described in a 24-page booklet offered by Hobart Brothers Co., Troy, Ohio.

The Lunkenheimer Co. has recently issued a new 44-page List Price Schedule R1, which supersedes all previously published list prices. It covers the entire line of valves, boiler mountings, lubricating devices which are listed numerically by figure number. These schedules are available through Lunkenheimer distributors in all industrial centers and from the company direct.

A second printing of "The Application and Selection of Pumping Units," by H. W. Ramey, is announced by Parkersburg Rig & Reel Co., Parkersburg, W. Va. This article, which makes a 52-page booklet, appeared first in the Rig & Reel Magazine.

"Not How Much, but How Well," is the title of a 58-page looseleaf booklet obtainable from Axelson Manufacturing Co., Los Angeles, Calif. This story of sucker-rod manufacture and handling constitutes a helpful handbook.

A 40-page edition of "Philbrico Furnace Construction for H.R.T. Boilers" is offered by the Philbrico Jointless Firebrick Co., 1800 Kingsbury Street, Chicago. This book covers boiler setting construction and refractory linings for horizontal return tubular and other types of fire-tube boilers.

A 38-page bulletin issued by the Foxboro Co., Foxboro, Mass., contains application data on instruments for control of flow in industrial processes such as controlling hot and cold oil, gas, molten sulfur, air, acids, caustics, gasoline, steam and chemical solutions.

New Equipment Demonstrated in Specially Built Trailer

The Daniel Orifice Fitting Co., Los Angeles, Calif., employs unique methods to demonstrate models of new equipment. The small trailer illus-

trated is a one-wheeler of special design to match car contour. It conveniently displays aluminum models of the Senior and Junior type orifice fittings, vapor-pressure bombs, high-pressure nonpounding check-valves, etc. Paul P. Daniel, president, recently toured southern, middle western, and eastern oil-producing states.

REBUILDING EDGE OF WORN DIPPER TEETH WITH WELDING

By F. J. HIRNER, Harnischfeger Corp.

Here is a simple and low-cost way of building up worn dipper lips and teeth right in the field, saving the expense of buying new parts and cutting down the time lost to an absolute minimum.

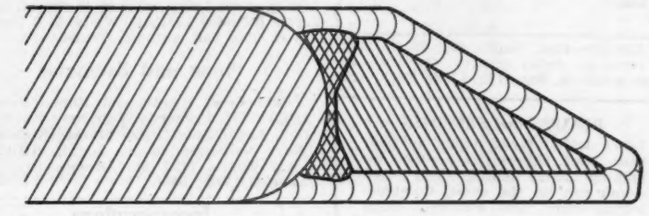
Practically all power-shovel and dragline buckets are equipped with lips and teeth made out of some type of manganese wear-resisting steel. Thus, in building up manganese steel sections, it is advisable to use a coated electrode having manganese steel properties similar to those of Smootharc Harmang. While this data applies specifically for use in Smootharc Harmang, it would apply to any electrode having approximately the following chemical analysis: Manganese, 11 to 14 per cent; nickel, 3½ to 4½ per cent; carbon, approximately 1 per cent.

This alloy has distinct physical properties which render it particularly valuable for use on operations imposing combined abrasive wear and excessive impact or shock. This electrode is not to be confused with the 3 to 10 per cent manganese types which ordinarily produce a brittle weld unfit for this application. Harmang is especially effective because of the fact that it is a coated type manganese electrode. This light coating stabilizes the arc and protects the metal against loss of carbon and manganese. However, the slag volume is kept at a minimum so as not to interfere with rapid cooling which is essential to the formation of an austenitic deposit.

In the "as welded" state this high manganese deposit is soft and ductile, but cold working such as hammering, peening, etc., decomposes the soft austenite to extremely hard martensite, and when once formed, this martensitic layer offers resistance to impact and abrasion.

The diagram shows how the weld metal should be applied, and should be studied carefully before work is started. Any operator following this procedure will shortly become expert at a job that formerly was a constant source of annoyance and expense.

Welding procedure: Polarity, reverse; elec-



Worn dipper lip or tooth stub

Harstain: Stainless steel to join alloy dipper tooth to mild steel filler block

Filler block of ordinary mild steel, shaped to supply base for manganese wearing surface

Harmang: One or two layers of manganese wear-resisting weld deposit.

trode, positive; work, negative.

A medium-length arc is recommended, 24 to 26 volts:

Size	Current rates amperes
1/8-inch	6-100
5/32-inch	90-150
3/16-inch	120-200
1/4-inch	170-260

These welding currents are general and should be adjusted in accordance with the particular application and the type of electrode used. Flatter beads and greater penetration are produced in the high heats, although care should be taken to avoid excessive welding heat.

The manganese steel surface to be built up should be divided into areas approximately 1½ inches square, and the amount of metal deposited at one time should be confined to this area. A rather wide bead, applied in a semicircular motion is recommended. But no more than three-sixteenths-inch thickness should be deposited at one time.

Vigorous peening of the hot bead with an air- or hand-hammer is essential to relieve shrinkage stresses, and to increase surface hardness. While the deposit should be hammered smooth, it is important not to do this peening to excess—that is, to a point where the metal starts to flake, indicating the deposit has reached brittleness.

CLASSIFIED ADVERTISING

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER

Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas. 2014 Second Nat'l. Bank Bldg., Houston. 707 Insurance Building, San Antonio. 433 Munsey Building, Washington, D. C. Address any of these offices.

PATENTS — TRADE MARKS

All cases submitted given personal attention.

Form **"Evidence of Conception"** with instructions for use and **"Schedule of Government and Attorneys' Fees—FREE**

LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
418 Bowen Bldg. Washington, D. C.

PATENTS obtained — inventions developed — working drawings — engineering advice. Mid-Continent Engineering Company, E. H. Waldrop, Shawnee, Okla

Leases and Drilling Blocks

SECURITY ABSTRACT COMPANY

El Dorado, Union County, Arkansas. Magnolia, Columbia County, Arkansas. Fee, Lease and Mineral ownership on short notice. Ownership maps.

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up. Owners—Address Attorney, Box 1122, Little Rock, Ark

DEALERS and SALESMEN

Don't wait! Write today for our lease offer. Others like yourself are making money selling these leases —you can do the same. Complete selling story, and elaborate maps furnished free. Write quick for details.

RUBUSH and COMPANY
1307 Pacific Ave., Dallas, Texas

WHY PAY big prices for Oil Leases when potential land in fee, all royalty, can be bought for $5. Investigate. J. N. SWANSON, Sayre, Oklahoma.

50,000 A. in and near Ill. production area. Consider drilling deal. Illinois Minerals Co., Cairo, Illinois.

PRODUCTION WANTED

Partially developed lease entirely proven producing depth 2,000 feet or less, must be in Texas, all data will be returned after inspection, personal purchase no brokering. Submit price. P. O. Box 2202, Fort Worth, Texas.

DRILLING deals wanted 50,000 acres Southern Illinois in and around production area. Elmer Gant, Anna, Illinois.

FOR SALE—75% interest in 840 acres semi-proven Oil and Gas leases near Celina, Tenn. Within one mile of proven acreage. Drilling rates reasonable. Frank H. Blum, Agent, 1205 Union Trust Bldg., Cincinnati, Ohio.

OPPORTUNITY for lime production at 950 ft. 40 acre lease ¼ mile of drilling well $300, 40 acres ½ mile of well $150. Good geology. Also 40 acre offset to two producing wells 730 ft. $400. Particulars Box 10, Kincaid, Kansas.

ABOUT 4000 acre block Massac County, So. Illinois, on structure, low rentals. Quick sale $1 per acre. J. N. Lawler, Girard, Kans.

410 ACRES about 2½ miles from new Texas Co. Producing Field—extensions in South Wayne County, Illinois, on trend. No hurry about drilling well. Will assign under fair terms. G. C. Rockwood, 122 N. Locust, Centralia, Illinois.

Leases and Drilling Blocks

N. MEX. weekly Oil Scout Report up to minute locations and developments. Send $1.00 for 2 months' service. Roy G. Barton, Hobbs, New Mexico.

100%, 200%, 300% per annum possible on your investment. 80 acres offsets a million shallow gasser. On pipe line. I furnish lease, drill well, $850.00. H. B. Buddenborg, Osawatomie, Kansas.

WANTED: 6,000-foot test well drilled this fall. Give full information in regard to equipment and responsibility in first letter. Box 196, Sidney, Nebraska.

WILL lease to responsible party 160 acres in 33-18-9, Creek County, or 200 acres 5 and 6-1N-2E, Murray County, Oklahoma. W. L. Suiter, 1016, Baltimore, Kansas City, Missouri.

TRADERS, owners and investors in production, royalties, leases and lands in the Texas Panhandle, Okla., and New Mex. Am quitting the brokerage business after 30 years here and offering my services to the public. A report and opinion on any deal or value offhand one dollar. Inspections and reports higher. E. B. Reeves, Alanreed, Texas.

OWNERS of bargains in production, royalties, leases and lands. I have quit the brokerage business, but have friends and clients who will buy your bargains. E. B. Reeves, Box 13, Alanreed, Gray County, Texas.

BLOCK 600 Acres. Fayette County near Beecher City. Structural limestone formation. Want immediate test. Sixteenth over-ride. Elton Beck, Herrick, Illinois.

BREWSTER COUNTY—TEXAS
Offer small tracts of land in fee all minerals included CHEAP. Write A. C. Smith, P. O. 200, San Antonio, Texas.

Plans and Estimates

Pipe Line, Roads, and Improvements. SURVEYS: Property—Contour—Construction. Legal Land Descriptions—Rights of Way. Valuation Maps. L. H. GOWDY, Civil Engr., 1226 So. Orange Dr., Los Angeles. WE. 5895.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms Colonial Charter Co., Wilmington, Del.

Situations Wanted

ACCOUNTANT-ENGINEER, young, desires position with progressive concern. CERTIFIED PUBLIC ACCOUNTANT. University graduate. Specialist in oil accounting and tax matters. Unusual experience in effecting savings in tax and record costs. Tactful and conservative. Present position limited in opportunity. Details exchanged in confidence. Address Box J-525, The Oil and Gas Journal, Tulsa, Oklahoma.

MECHANICAL Engineer, want foreign work as junior engineer. Employed by major oil company. Desire more responsibility and compensation. Practical experience—roughneck, roustabout, well servicing, designing pumping units, bottom-hole pressure work, weighing wells and analyzing well troubles. Age 27, single, excellent health. Details exchanged in confidence. Address Box J-530, The Oil and Gas Journal, Tulsa, Oklahoma.

COLLEGE GRADUATE, male 22, University of Arkansas 1938, desires position with oil or gas company. Experienced in typewriting, shorthand, general office work, but will do anything. Ambitious, energetic, willing to start from bottom. Arthur Meyer, 686 Acamedy St., New York City.

NOW Available—Experienced oil refinery traffic mgr., wide exp. in sales, marketing, purchasing and office management. Thoroughly trained and competent to assume responsible pos. Married; 3 dependents. Refs. furn. Address Box J-515, The Oil and Gas Journal, Tulsa, Okla.

NOW AVAILABLE. Executive and Accountant. 18 years experience with independent producing companies. Thorough knowledge accounting, financing, stock registration, federal and state taxes and business law. Desire connection with company needing services in line with these qualifications. Address Box J-532, The Oil and Gas Journal, Tulsa, Oklahoma.

ATTORNEY-ACCOUNTANT, age 31 yrs., oil company experience. Now employed, desires change. Address Box J-526, The Oil and Gas Journal, Tulsa, Oklahoma.

COMBINATION WAREHOUSEMAN AND FIELD OFFICE CLERK, desires foreign job. Ten years' experience in Gulf Coast with major company and still employed by same company. Knows oil field equipment and material, and thoroughly experienced in handling all warehouse and field office records. Prefer South America. Age 34. Address Box J-523, The Oil and Gas Journal, Tulsa, Oklahoma.

Situations Wanted

CONSTRUCTION Superintendent experienced in supervision construction refinery and cracking plants. Sixteen years' refinery construction exp. Address Box J-531. The Oil and Gas Journal, Tulsa, Oklahoma.

Help Wanted

WANTED—High class salesman experienced in the selling of oil well pumping equipment; engineering background preferred. Write briefly your qualifications and state remuneration desired. Correspondence strictly confidential. Address Box J-513, The Oil and Gas Journal, Tulsa, Oklahoma.

GRADUATE in petroleum engineering for instructor at state university. Several years' field experience and teaching personality desirable. Give complete details, experience, salary, and small photo. Address Box J-514, The Oil and Gas Journal, Tulsa, Oklahoma.

SALES AGENTS with established contacts wanted to sell equipment to oil, coke and chemical companies. Interested parties located in or near Boston, New York City, Philadelphia, Chicago and Michigan. Address Box J-522, The Oil and Gas Journal, Tulsa, Oklahoma.

MANUFACTURER of well known line pipe fittings is seeking services of Texas-Gulf Coast representative having a knowledge of refinery piping practices as well as a following in this field in both engineering and purchasing departments. This position would necessitate traveling the States of Louisiana and Texas with headquarters at Houston. Write briefly your qualifications and state remuneration desired. Address Box J-533, The Oil and Gas Journal, Tulsa, Oklahoma.

Survey Service

THE DOWSING METHOD for locating oil structures, faults, and treacherous areas, operates on the principal of vibratory response to emanations from petroliferous sub-strata. Our WATSON No. 2, pioneer well of the Wilmington, Calif., field was located by this method and all my personally owned production. 15 years' experience. This physico method may solve all your structural difficulties. Geo. Miller, 1548 Post Avenue, Torrance, California. Phone 983.

Ranches and Farm Lands

317 ACRES farm land. Good improvements, on Mattoon's oil structure. Coles County, 3 miles South of Mattoon. Leased Carter company. Price $150 per acre, easy terms. Mark Hortenstine, Gays, Illinois.

For Sale—Maps

1938 REVISED EDITION

MAP of State of Texas, Eastern N. M., parts of Southern Okla., SW Ark. and La., shows Oil and Gas Fields in color, Counties, County Seats, elevations, coordinated alphabetical index of counties and fields. Price $1.00 postpaid

Write for descriptive folder of Oilfield and County Ownership Maps.

ZINGERY OIL MAP COMPANY
Fair Building Fort Worth

Manufacturer

Established Manufacturer of Oil Field Equipment with large plant and ten (10) stores in Mid-Continent and California Oil Fields desires to manufacture patented items for use in pipe line pumping, production pumping, or drilling service. Address Box J-403, The Oil and Gas Journal, Tulsa, Okla.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
NEW—Mid-Continent Oil & Gas Association 1938 Model Forms of Unit Operating Agreement #2, Exhibit #2-A and Accounting Procedure #2-B in stock for immediate delivery, sample gratis. Olds Press, 215 East Third St., Tulsa, Okla.

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

CLASSIFIED

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*
7 Lines	*$2.45*	*$4.20*	*$5.95*	*$7.70*
8 Lines	*2.80*	*4.80*	*6.80*	*8.80*
9 Lines	*3.15*	*5.40*	*7.65*	*9.90*
10 Lines	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

HEAVY JOB FOR ROTARY LINES?

TAKE A TIP . . . USE FORM-SET PURPLE STRAND

HERE's a Rotary Line that is proving itself on heavy, hard-running drilling jobs all over the country. Once you try it and have seen its performance, we know that you'll agree there isn't a better rotary line made.

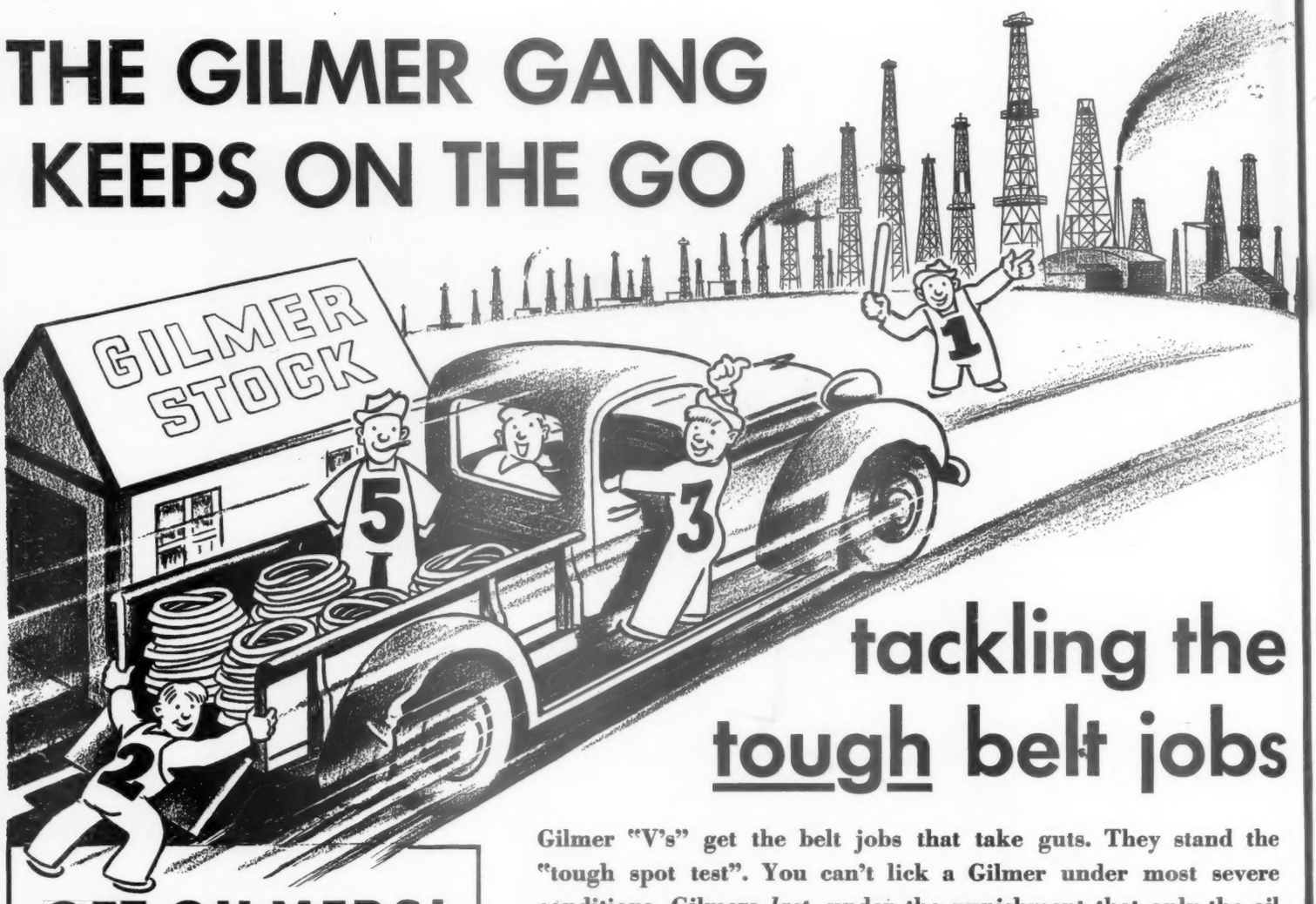
Form-Set pre-formed, of course, to give it the extra life and ease of handling that come from minimizing internal stresses. Purple-Strand quality—Bethlehem's grade of Improved Plow Steel that betters standard specifications for this high-strength steel. Built-in lubrication; accuracy of design and manufacture that can come only from a half-century's experience in making wire rope for strenuous services.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription prices: Domestic, $6.00 a year; foreign, $7.00 a year. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Oklahoma, under the Act of March 3, 1879.

THE GILMER GANG KEEPS ON THE GO



tackling the tough belt jobs

Gilmer "V's" get the belt jobs that take guts. They stand the "tough spot test". You can't lick a Gilmer under most severe conditions. Gilmers *last*, under the punishment that only the oil fields give. That's because engineers *who build only belts* build rugged endurance into Gilmers . . . tailor-make Gilmer Belts "in the groove", to A P I "nominal plus" specifications, on the world's largest assortment of V-moulds. Centrally located Gilmer jobbers carry full stocks for quick deliveries.

GET GILMERS!

Get the Gilmer Gang!

5 exclusive, famous features

Gilmer **TOP TENSION RUBBER—Tough, resilient. Cuts out costly misfits.**

Gilmer **RUBBER-LOCKED PULLING CORDS—Patented construction, concentrating brute strength in thin section, makes cords ride parallel, without twisting, under pressure.**

Gilmer **HEAT-RESISTING BOTTOM RUBBER—Specially developed by Gilmer to insure cool running at high speeds and eliminate "squashing" in the groove.**

Gilmer **DOUBLE JACKETS—Protect the belt's vital working parts from oil, dirt, and grease, making Gilmers last three times as long.**

Gilmer **CONTROLLED STRETCH—Pre-tested, to guarantee permanently matched working lengths on every job.**

"THE LARGEST OIL FIELDS IN THE WORLD USE GILMER BELTS"

L. H. GILMER COMPANY

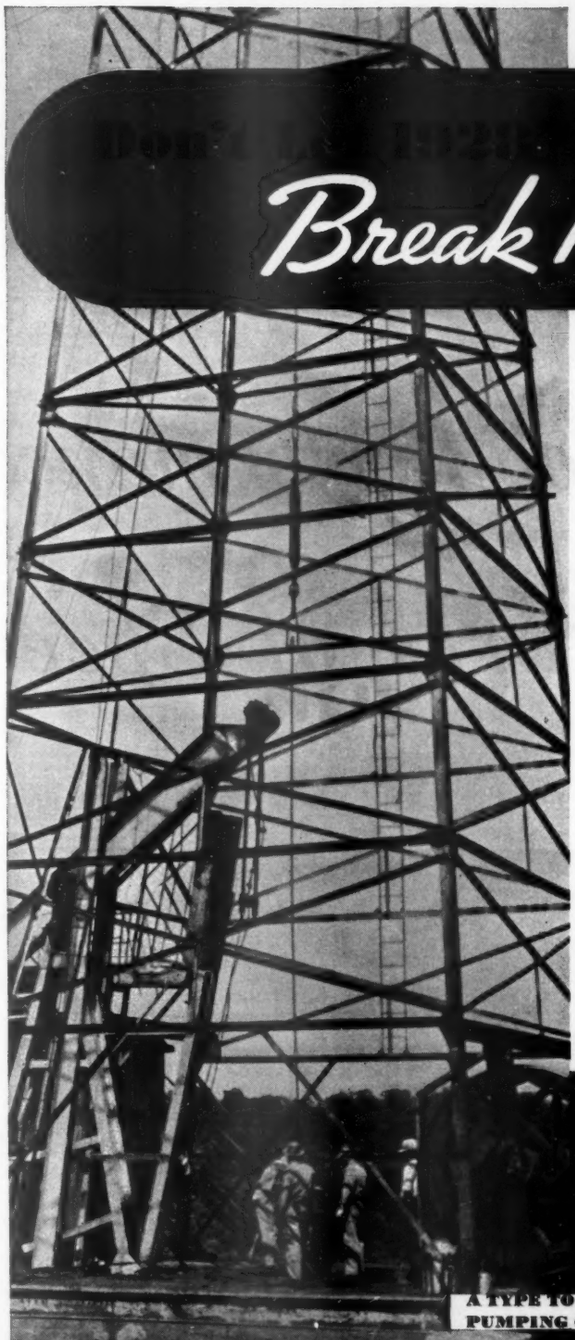
TACONY • PHILADELPHIA

These GILMER DISTRIBUTORS carry full stocks

Kansas	Great Bend—International Supply Company
	Hutchinson—Lucey Products Corporation
Louisiana . .	Houma—Standard Supply & Hardware Company
	Lake Charles—Standard Supply & Hardware Company
	Leeville—Standard Supply & Hardware Company
	New Orleans—Standard Supply & Hardware Company
	Shreveport—Cunningham Machinery Corporation
Oklahoma . .	Oklahoma City—Lucey Products Corporation
	Stonewall—Lucey Products Corporation
Texas	Amarillo—Star Equipment Company
	Galveston—Electric Supply Company
	Graham—Graham Welding & Machine Company
	Houston—Buda Engine & Equipment Company
	Houston—Carter-McClarty Supply Corporation
	Longview—Buda Engine & Equipment Company
	Odessa—Buda Engine & Equipment Company
	Odessa—Lucey Products Corporation
	Tyler—Tyler Machinery & Supply Company
	Wichita Falls—General Machine & Supply Company
	Wichita Falls—Lucey Products Corporation

GILMER DISTRICT SALES OFFICES

Kansas	Wichita—R. V. Stout, District Manager
Louisiana . .	New Orleans—Fred Sintes, Jr., District Manager
Oklahoma . .	Tulsa—D. A. Cant, District Manager
Texas	Houston—C. P. Williams, District Manager



Break 1938's Rods

● When rods keep corroding and breaking at the forgings—when ringworm corrosion still shortens sucker rod life—then you know that 1928's weaknesses* are still keeping 1938's production costs up too high.

You may think that the weaknesses of 10 years ago aren't causing trouble today—but the lure of cheap rods is too strong. Rods that are not fully and properly heat treated are sometimes used where they shouldn't be—then breaks come too soon.

Be sure about what you need and what you get. You can tell what kind of rods you need by a well study, and you can tell what you're getting by the specifications of a sucker rod—and we can help you with both.

**Ringworm corrosion and excessive corrosion of forgings were corrected by fully normalizing, which Jones introduced to the industry in 1928.*

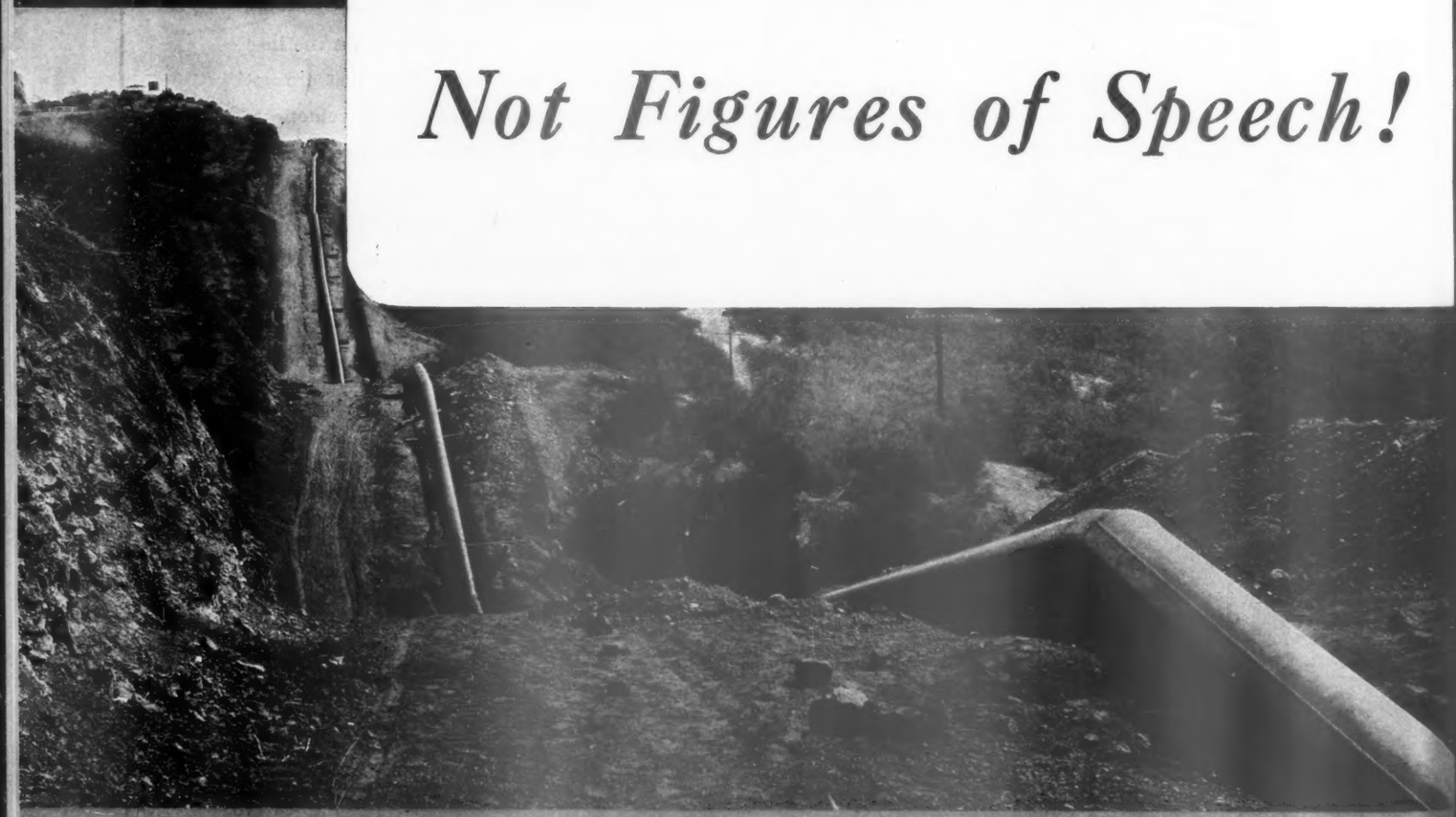
A TYPE TO FIT EVERY PUMPING CONDITION

one ucke ods

The S. M. Jones Company, General Office and Factory, Toledo, Ohio – General Sales Office, 518 McBirney Bldg., Tulsa – Southern Division Office, 506 Dallas National Bank Bldg., Dallas – Export Office, 19 Rector Street, New York City

Facts of Performance...

Not Figures of Speech!

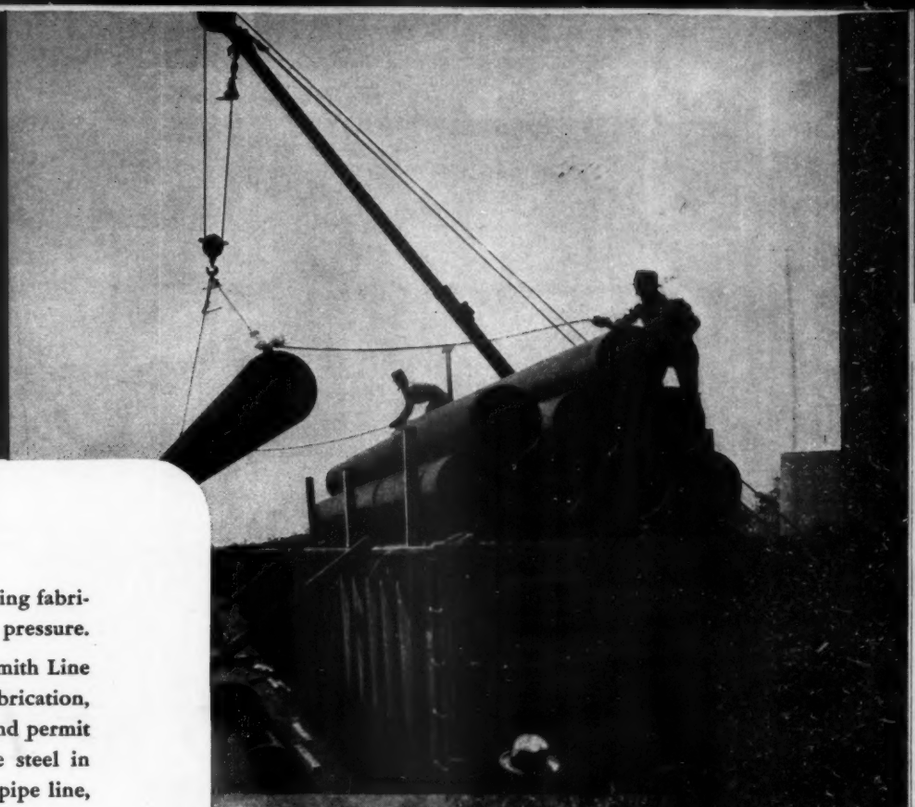


A.O. SMITH
CORPORATION

MILWAUKEE, WISCONSIN

District Offices: New York • Pittsburgh • Chicago • Tulsa • Dallas • Houston • Los Angeles

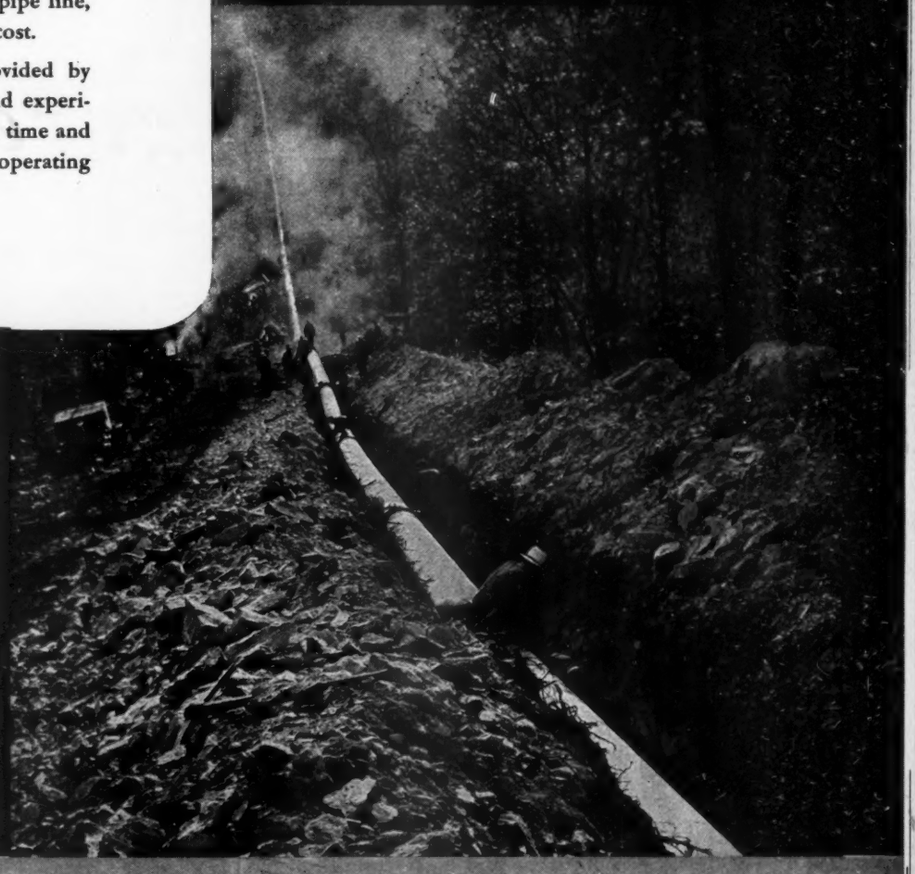
SMITH LINE PIPE



EVERY length of Smith Line Pipe has to pass a test during fabrication of from two to three times the normal working pressure.

Improved physical characteristics of the steel in Smith Line Pipe, which result from the Smith method of fabrication, provide greater strength without increased weight and permit higher stresses with safety. Since the weight of the steel in the pipe represents a major item in the cost of any pipe line, more efficient use of steel means lower construction cost.

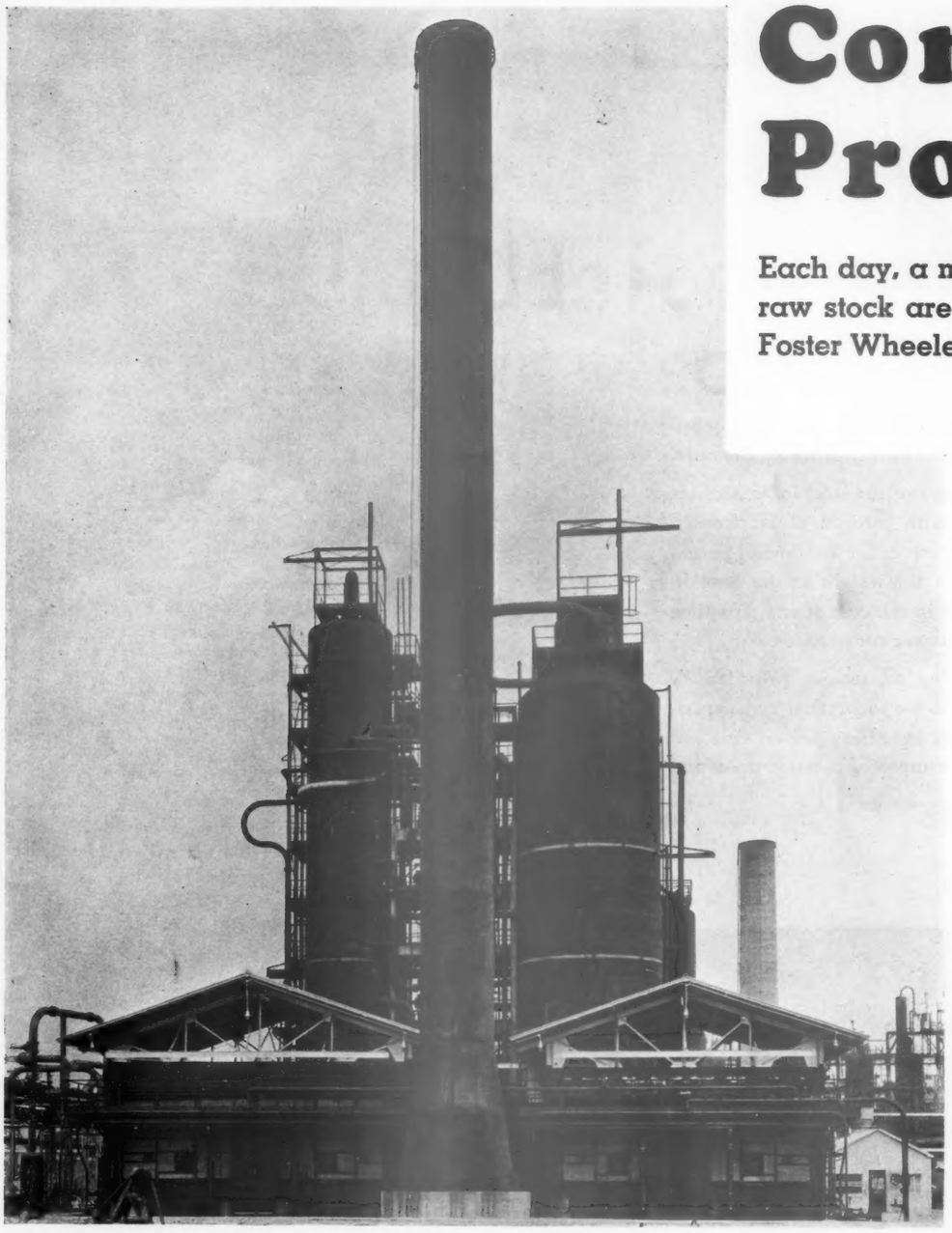
The construction and operating advantages provided by Smith Line Pipe long ago passed the theoretical and experimental stage. The fact is, that they have been proved time and time again in actual service by many of the major operating companies.



PIONEER MANUFACTURERS OF ELECTRIC-WELDED

LINE PIPE

SMITH HIGH YIELD CASING • SMITH PRESSURE VESSELS



21,000 b/d three-stage atmospheric and high vacuum crude distillation plant.

Complete Processes

Each day, a million and a half barrels of raw stock are processed in 250 complete Foster Wheeler refining plants, including:

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- Higher olefin gas concentration plants
- Iso-Octane plants
- Liquid butane and propane units
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Unit Responsibility

DEVELOPMENT RESEARCH EXPERIMENTAL

PROCESS DESIGN MECHANICAL DESIGN

ENGINEERING

FABRICATION CONSTRUCTION OPERATION

FOSTER WHEELER CORPORATION

165 Broadway,
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FOSTER WHEELER

CRANE STEEL VALVES

FOR REFINERY SERVICE

Whether you operate cracking units or polymerization plants—your capacity 1,000 or 100,000 barrels, you can't afford to gamble with valve quality—because valve failures mean costly interruptions. A valve may look good, but it's what's inside that counts in performance value.

Look to Crane valves for dependability in every application. Backed by foremost skill in design and metallurgy in valve engineering, combined with a manufacturing experience of over 80 years—Crane-Quality means better valve performance in the most rigorous services.

In Crane steel valves you will find a quick solution to the flow control problems of modern refining processes. Cast in a wide range of alloys, they are available in the material best suited to the working pressures and temperatures of each service.

Crane steel gate, globe, angle and check valves are made in a complete line of sizes and pressure ratings—in a variety of proved trimming metals to fit each service need.

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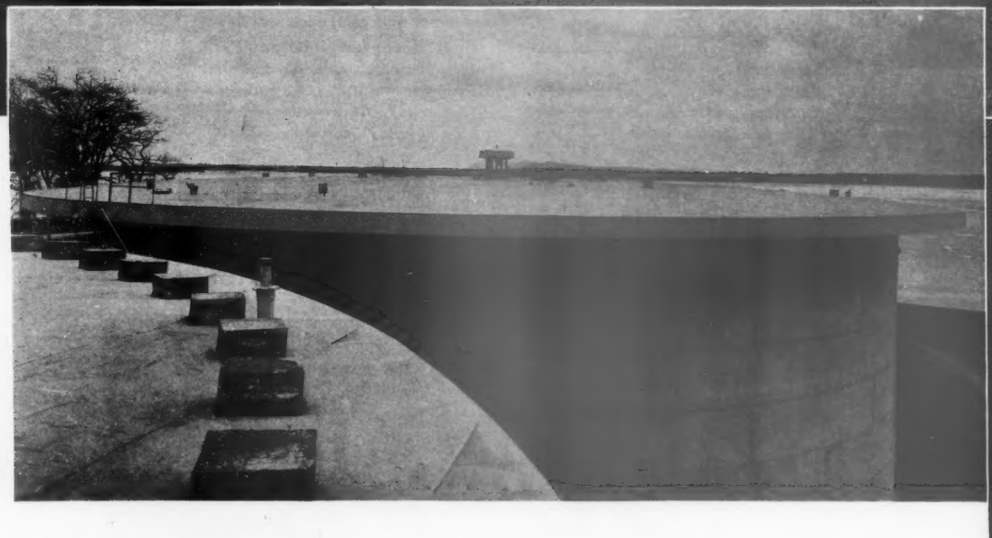
PLUMBING • HEATING • PUMPS

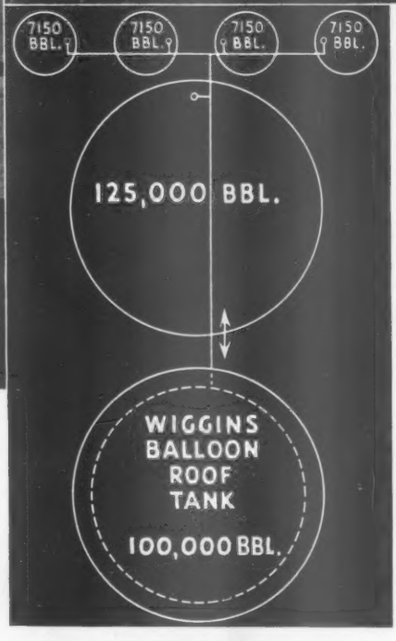
CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVENUE, CHICAGO, ILLINOIS

NATION-WIDE SERVICE THROUGH 134 BRANCHES AND MORE THAN 500 WHOLESALERS

Crane No. 87X Steel Gate Valve for 1500 lbs. W.P. at 900° F.

One Balloon Roof Serves 6 Tanks





BECAUSE of its relatively large capacity, the Wiggins Balloon Roof is particularly applicable to flat bottom storage tanks at bulk marketing plants. It prevents evaporation loss by being able to expand and make room for excess vapor which otherwise would be vented to the atmosphere. By installing a Balloon Roof on one of the larger tanks at a station, other tanks can be joined to it, forming a vapor saving system of high efficiency. This is done by connecting the vapor spaces of the several tanks with large diameter light gauge piping.

An installation of this kind is illustrated above. It consists of four 7,150-bbl. tanks, a 125,000-bbl. tank, and a 100,000-bbl. tank with a Wiggins Balloon Roof located at a combination marine terminal and local bulk station at Montreal, Que. Gasoline is handled exclusively. The supply, which is received by tanker, is held in bonded storage in the two large tanks and pumped into the smaller tanks for local delivery.

The Balloon Roof is 144 ft. in diameter and has a capacity of 75,000 cu. ft. The diagram indicates how it is connected with the other tanks. It is interesting to note that, despite the northerly latitude of Montreal, the daily temperature variation is sufficient to cause the Balloon Roof to be partly inflated practically every day, even during the coldest time of the year.

For information on Wiggins Balloon Roofs and other Horton products, please address our nearest office.

CHICAGO BRIDGE & IRON COMPANY

Sales Offices: Dallas, Houston, Tulsa, Birmingham, Chicago, Detroit, Cleveland, New York, Philadelphia, Boston, San Francisco, Los Angeles. *Fabricating Plants:* Birmingham, Chicago, and Greenville, Pa.

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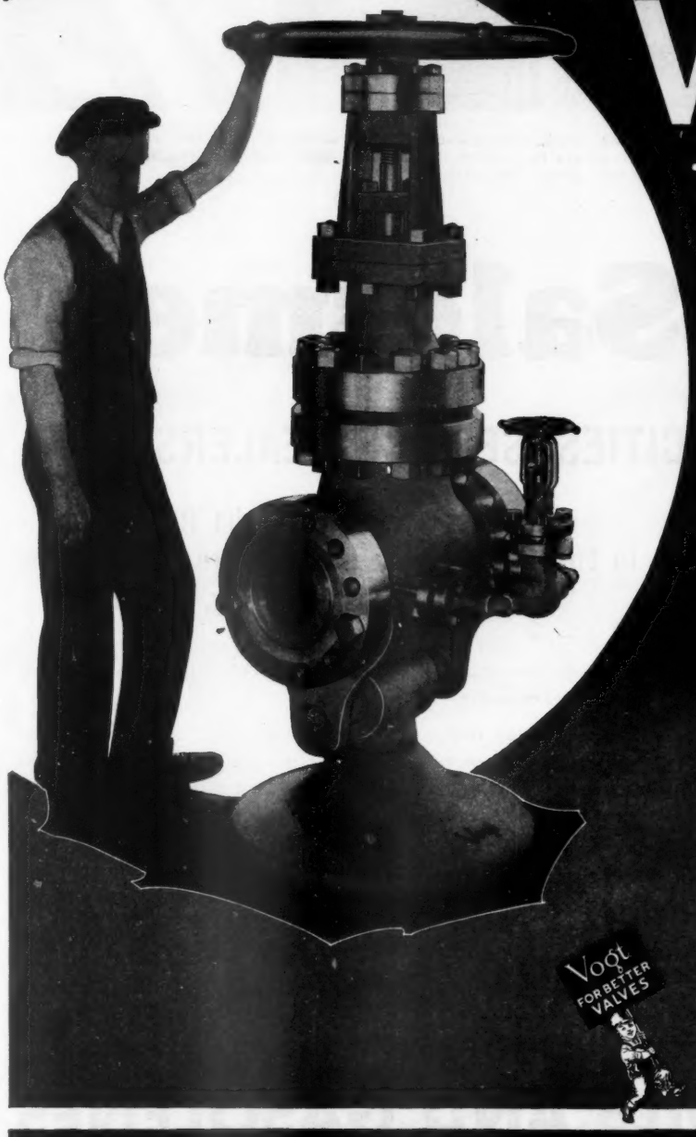
WIGGINS BALLOON ROOFS

Worlds Largest
DROP FORGED STEEL VALVE by Vogt



6" Size for 1500 lbs. WORKING PRESSURE at 950° F.

WAY with cheaper and better DROP FORGED steel valves . . . built as Vogt only knows how to build them!

Valves like this are the product of our many years close cooperation with leading refinery, power plant and chemical plant engineers.

That's why you're always a step ahead when valves are Drop Forged by Vogt.

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Every Friday night, 16,000 Cities Service dealers welcome millions of listeners—in their homes and on the road—to the concert. The music America loves, together with persuasive sales messages, merchandise the products and services that Cities Service dealers sell. A skillful show, it also is a successful sales organization. Radio editors and national committees have awarded it top honors for excellence.

Why not get the benefit of this powerful sales influence—put it to work for you? As a Cities Service Distributor or Dealer you can have all the proved-for-profit advantages of this great full hour program. Write for details today—to your nearest Cities Service office.

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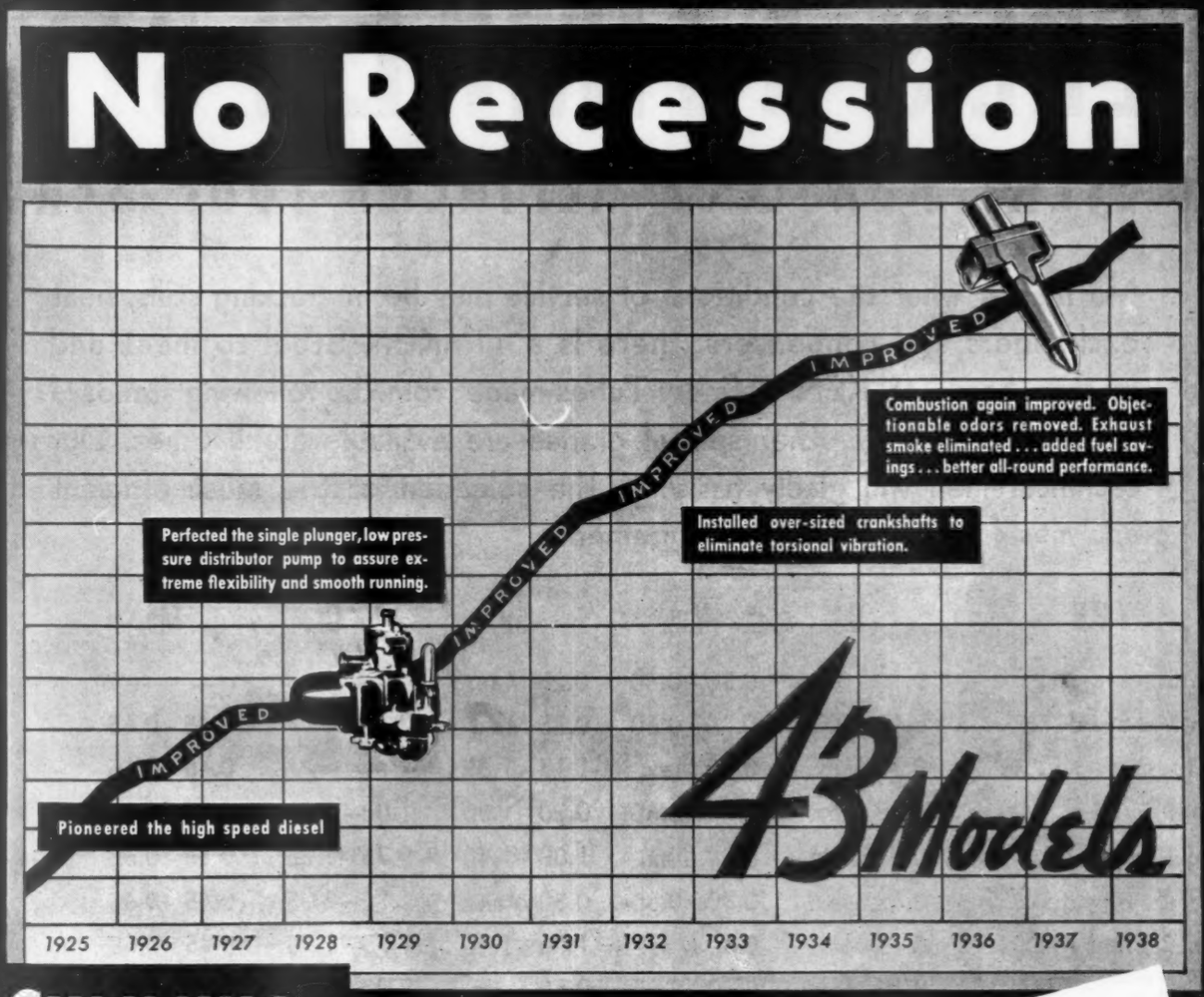
Radio Concerts every Friday, 8 p. m., E.D.S.T., WEAF and 43 association Stations.

No Recession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43 Models
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Whatever your power need (industrial, automotive, or marine) remember this: The Cummins Diesel has been field-tested and field-approved, not only in the use to which you will put it, but in the widest variety of power applications ever given ANY diesel engine.

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FOR EVERY PHASE OF REFINERY TUBE SERVICE

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TYPE	C	Mn.	Sil.	Cr.	Mo.	Ni.
Carbon Steel	0.10 - 0.20	0.30 - 0.60	0.25 Max.	—	—	—
Carbon-Mo Steel	0.10 - 0.20	0.30 - 0.60	0.25 Max.	—	0.45 - 0.65	—
Silmo Steel	0.15 Max.	0.50 Max.	1.15 - 1.65	—	0.45 - 0.65	—
DM Steel	0.15 Max.	0.30 - 0.60	0.50 - 1.00	1.00 - 1.50	0.45 - 0.65	—
Sicromo 1 Steel	0.15 Max.	0.50 Max.	1.00 - 1.40	0.75 - 1.25	0.45 - 0.65	—
2% Cr ½% Mo Steel	0.15 Max.	0.30 - 0.60	0.50 Max.	1.75 - 2.25	0.45 - 0.65	—
Sicromo 2 Steel	0.15 Max.	0.50 Max.	1.00 - 1.40	1.75 - 2.25	0.45 - 0.65	—
2¼% Cr 1% Mo Steel	0.15 Max.	0.30 - 0.60	0.50 Max.	2.00 - 2.50	0.90 - 1.10	—
Sicromo 2½ Steel	0.15 Max.	0.50 Max.	0.50 - 1.00	2.25 - 2.75	0.45 - 0.65	—
Sicromo 3 Steel	0.15 Max.	0.50 Max.	1.00 - 1.40	2.75 - 3.25	0.45 - 0.65	—
4-6% Cr-Mo Steel	0.15 & 0.20	0.50 Max.	0.50 Max.	4.00 - 6.00	0.45 - 0.65	—
Sicromo 5 Steel	0.15 Max.	0.50 Max.	1.00 - 2.00	4.00 - 6.00	0.45 - 0.65	—
18-8 Steel	0.07 Max.	0.50 Max.	0.75 Max.	17.50 - 19.50	—	8.00 - 10.00
16-13-3	0.13 Max.	1.25 Max.	0.60 Max.	15.50 - 17.00	2.50 - 3.25	12.50 - 14.50

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO
STEEL AND TUBE DIVISION

Manufacturers of TIMKEN Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; TIMKEN Alloy Steels and Carbon and Alloy Seamless Tubing; TIMKEN Rock Bits; and TIMKEN Fuel Injection Equipment.

TIMKEN
SEAMLESS STEEL TUBES

CONTINUOUSLY– SINCE 1930

More than eight years ago The M. W. Kellogg Company developed, designed and erected the first cracking unit for what is now the largest oil refinery in Iran.

Since then, this organization, through its program of comprehensive planning for processing available raw materials into marketable products, has constantly collaborated in the development of new processes and equipment to meet the changing and increasing market demands of this territory.

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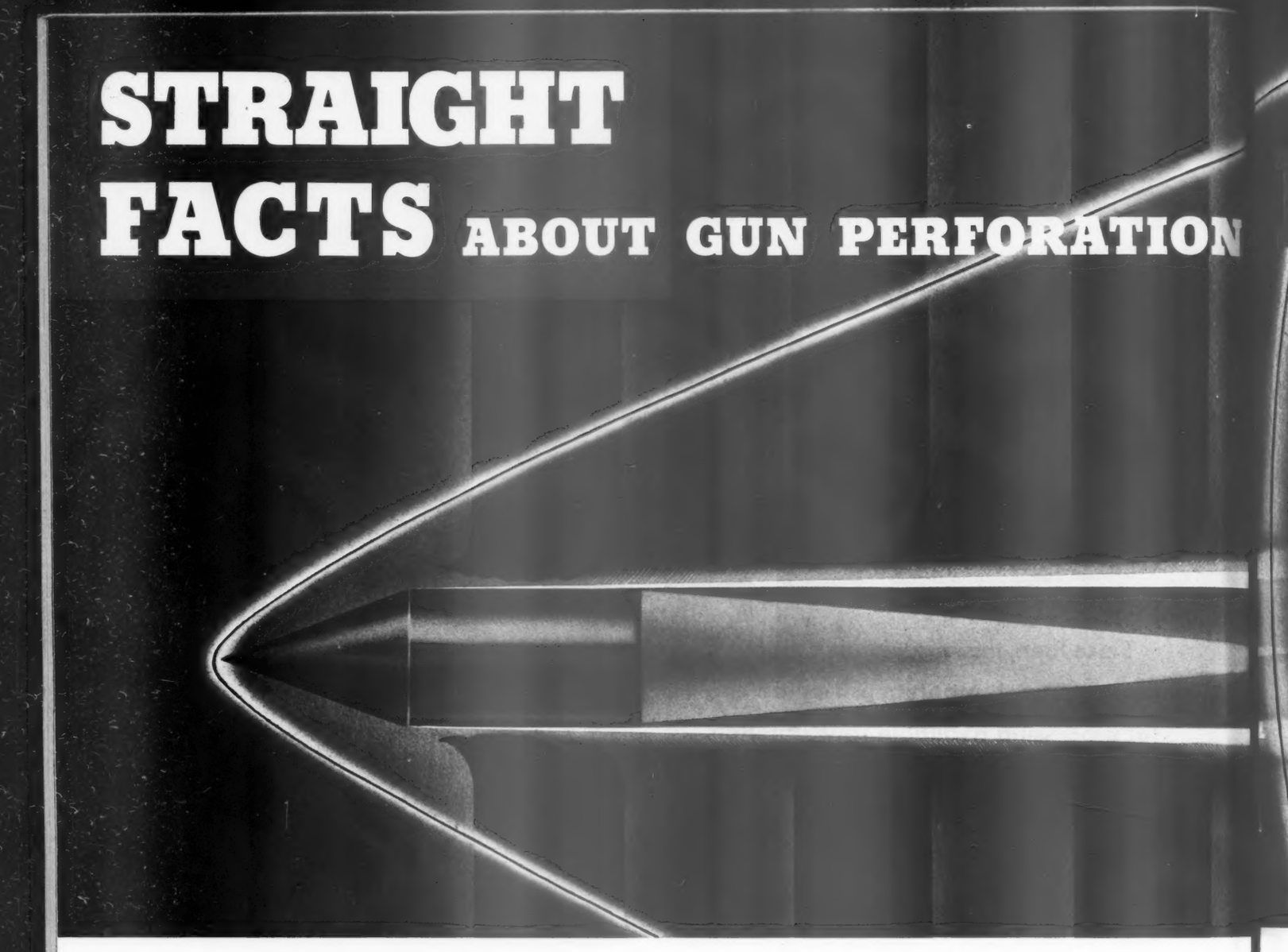
LICENSING AND CONSTRUCTION AGENTS under United States and Foreign Patents for Gasoline Products Company, Inc. Cross, Holmes-Manley, de Florez Tube and Tank Combination Cracking Units ••• The Polymerization Process Corporation Gas Polymerization Units ••• The Gray Processes Corporation Clay Treating ••• Standard Oil Company New Jersey Standard Oil Company Indiana Union Oil Company of California Lube oil refining with Propane and Phenol ••• Deasphalting Dewaxing Solvent Extraction and Acid Treating Plants

STRAIGHT FACTS ABOUT GUN PERFORATION



IN 1932 Lane-Wells Gun Perforator was presented to the Oil Industry as a more economical method of perforating casing to test for possible producing strata before a well was abandoned. The success of early tests lead to the acceptance of the services as a standard practice for wells in which production had fallen below a profitable level and development of new uses that have become more important than the initial job.

Up to April 30, 1938, 1,613 oil companies in the United States had used the Gun Perforator in 14,079 wells for completion following the setting and cementing of blank liners; for plug back operations; for cement squeeze jobs; for more effective acidizing; to open clogged screens; to restore circulation at a predetermined point in frozen drill pipe and many other applications.

The Straight-Line production methods made possible by Gun-Perforating with attendant increased production have repaid operators many times the costs. How many barrels of oil have been produced from wells which formerly would have been abandoned and exactly how much lower completion and production costs have been is, of course, information which oil companies cannot be expected to release. It is evident that more than 1,600 different oil companies would not have continued to use Gun Perforating service if it had not proved satisfactory under their own tests.

A great deal of experimental work was carried on relative to penetration before this service was started and much work of this nature is continually in progress. Only in comparatively few of the wells Gun Perforated has casing, liner or screen been pulled. Actual field computations, therefore, have been checked carefully to determine the effectiveness of Gun Perforation. Accurate checks of the perforations in pulled liners and casing against the shooting schedules reveal that penetration in the well closely parallels penetration tests in the laboratory. Penetration tests are carried on along two distinct lines, namely, penetration of casing and penetration of test bars.

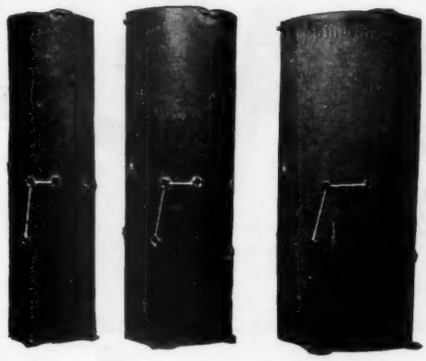
Penetration of casing is determined by setting up casing of different diameters, one within the other, to simulate actual well conditions. The pieces of casing are cut and strap welded top and bottom to hold them concentric. The combination of 6⅝" 26# inside 8⅝" 36# inside 10¾" 40# grade "C" casing makes a total of 1.135 inches of steel. The same combination of casings cemented adds 1.262 inches of cement to give a total thickness of 2.397 inches of steel and cement through which the Gun Perforator bullet passes with ease.

Penetration into test bars has been found, through experience, to be the best method for accurate measurement of penetration. Mild steel bars are set up on a special frame made to carry them, as well as the test gun.

A standard distance is maintained between the muzzle of the gun and the test bar. One point of special note is that a solid block of steel, such as these bars, offers more resistance to penetration than the same thickness of steel if it is made in steel plates, such as casings. The reason for this is that the bullet, upon passing out of the casing, throws up burrs on the outside and a certain amount of the steel in the path of the bullet is simply turned to one side, thereby decreasing the force necessary to put the bullet through, while shots into the test bar do not have this advantage and the steel in the path of the bullet must be crowded forcibly to one side. Consequently penetration is somewhat less in the bar. The amount of penetration is measured by taking readings to the base of the bullet. It has been found that the point has penetrated, on an average of many shots, to a depth of 1.450 inches, which is more than sufficient to bury the bullet completely.

ETRATION

RIGHT—*A clean hole straight through three strings of cemented casing. This test set-up consists of 6⅝" 26# inside 8⅝" 36# inside 10¾" 40# Grade "C" Casing. This makes up 1.135 inches of steel penetrated plus 1.262 inches of cement, a total of 2.397 inches. The bullet was recovered and is shown at the left.*

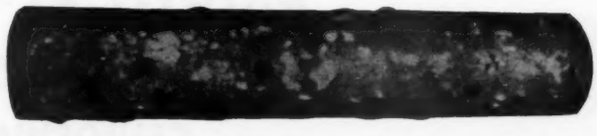


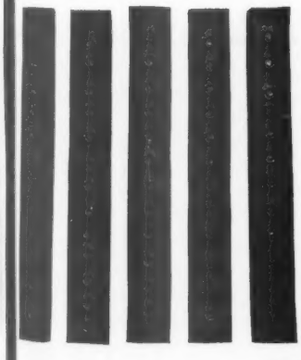
LEFT—*Welded straps held this casing concentric for penetration test shots. The clean holes straight through 6⅝" 26# inside of 8⅝" 36# inside of 10¾" 40# Grade "C" Casing placed to simulate actual well condition shows that the perforations are made without splitting or distorting the casing.*

ABOVE—*Twenty-three shots through a 5½" OD screen, from 7727' to 7718' produced 22 holes. The twenty-third bullet penetrated far enough to bring it flush with the inside of the screen. The point was found to be broken off flush with the outside of the screen. A punch and hammer were required to remove this fragment.*

BELOW—*105 holes in this pulled liner out of 107 shots. One bullet stuck in a collar with only partial penetration and one bullet unaccounted for. Perforations were made between 5650 and 5660 feet for production on a new well through 7" OD 26# Casing and 5" 18# Liner.*

ABOVE—*From the first well to be Gun Perforated in the Rhodessa, Louisiana Field, the liner was pulled January 7, 1938. The "lap-weld" type pipe, shown above, is practically in perfect condition after perforating.*





LEFT—*The solid block of steel offers more resistance to penetration than the same thickness of steel in the form of casing. Shots into these test bars average 1.450 inches, more than enough to bury the bullet completely.*

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That's the new rate per barrel throughput for Dubbs cracking in the United States, beginning October first

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Dubbs Cracking Process
Owner and Licensor

BUILT TO HANDLE ANY JOB WITHIN THEIR POWER RANGE

The quick acceptance of the new PVG heavy-duty V-type gas engine by the petroleum industry is proof of the soundness of its design and construction. Patterned after the highly successful XVG gas-engine-driven compressor, the PVG gas engine is fast establishing itself in a similar position of leadership.

The PVG is a highly economical and dependable driver for both reciprocating and centrifugal machinery, such as pumps, blowers, generators and other equipment. Its use should be considered wherever gas is available as fuel. Governors can be furnished to give any degree of speed control.

All those who are now using XVG compressors will welcome the interchangeability between XVG and PVG units. Many parts such as cylinders, pistons and valves interchange on the two machines.

The PVG is made in three sizes of 185-, 275-, and 370-hp., all operating at 400 rpm. Ask for bulletin 10,011 for further details. The nearest Ingersoll-Rand representative will be glad to help you with your problems.

Other I-R equipment for oil field service includes the many sizes and types of both stationary and portable compressors, Diesel engines, pipe line pumps, rock drills, etc.

667-7

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The Ideal Combination for Conservation and Safety

Conservation and safety are two attributes that every investor looks for. He is satisfied with a low rate of interest if he can conserve his assets with a high factor of safety.

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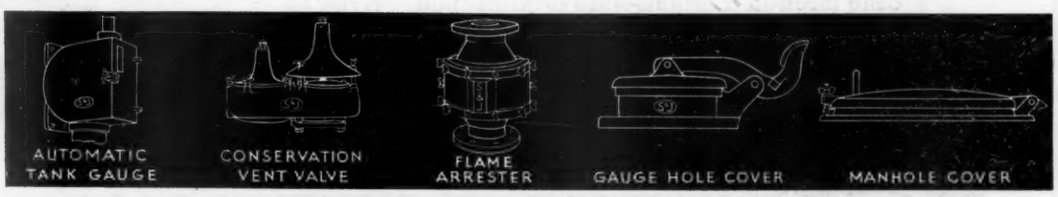
Here's how it figures out on a 55,000 barrel full Mid-Continent gasoline storage tank of standard steel deck construction. With open vents, the daily evaporation loss runs 7 barrels, which at 3 cents per gallon piles up the astounding yearly loss of $3219.30.

By making tanks gas tight and holding them under 0.9" water pressure or vacuum, this loss is reduced 49% to $1557.46. For about one-fourth that amount you can make a tank gas tight with the S. & J. Fittings shown below which will return a 400% dividend every year the tank is in use.

In addition to the conservation of gasoline, you secure the advantages of automatic gauging, and the use of an Underwriters Approved Flame Arrester usually brings in its wake insurance credits that are reflected in lower premiums. Write for our catalog covering fittings for conventional low pressure storage tanks, as well as spherical and spheroidal storage.



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BERKELEY, CALIFORNIA

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SHAND & JURS

Above—Pipe line in foreground is part of the extensive steam-heating system for the storage tanks.

OIL COMPANY SAVES 20%

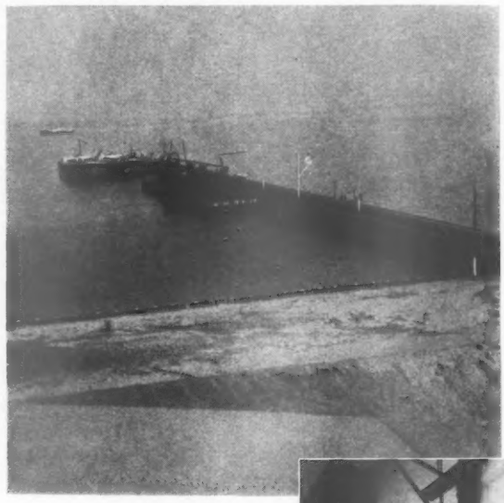
A COMPLETELY INSULATED HEATING SYSTEM PAYS FOR ITSELF IN ACTUAL SERVICE AT LARGE OCEAN TERMINAL.

The Shell Union Oil Corporation knows that Carey Heat Insulations are a good investment. The fuel costs records, showing reductions of 20%, prove it. Yet this is nothing unusual. Records of equal and greater savings are numerous throughout the oil industry.

From the Shell boiler house, a far-flung system of pipe lines transmits 380°F steam to the farthest point of the system with a heat loss of only 2°F. This is real efficiency, made possible by the correct application of Carey Insulations. The walls of the boilers are insulated with 2-inch Carey 85% Magnesia Blocks; the pipe lines, ranging from 2 to 12 inches in diameter, are insulated with Carey 85% Magnesia Pipe Covering.

Carey produces insulations for every requirement of the oil industry—for Stills, Water Tube Boilers, Stack Linings, Feed Water Heaters, Breechings, Ducts, Turbines, Absorbers, Pre-Heaters, Evaporators, Cooling Towers, Compressors Towers, Drums, Condensors, Heat Exchangers.

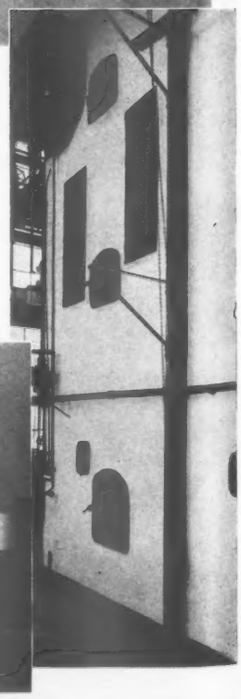
Back of the success of Carey Insulations are over 50 years of practical experience, covering contact with every insulating problem. Profit by this experience to reduce your fuel costs. Carey service is available through a nation-wide organization. Write for Insulation Handbook—Address Dept. 34.

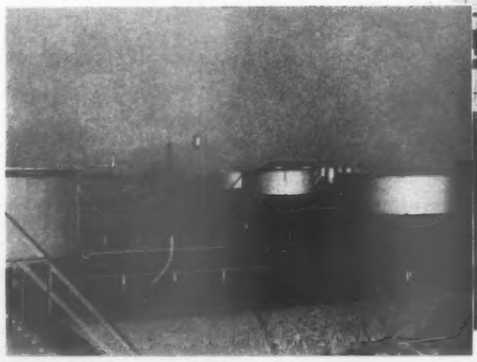


Above—Loading Rack at Shell Union Oil Terminal—a Carey insulated steam line extends out along the pier.

Right—The Shell Union Oil heating plant, consisting of two, 250 H.P. Heine boilers, Carey insulated.

Below—A few of the 24 steel storage tanks, with capacities of 5,000 to 80,000 barrels each—pipe line in foreground, a part of the extensive steam heating system for the tanks.





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IN 7 WILDCATS
IN 6 WEEKS
IN SCATTERED DISTRICTS

IS (WE ARE TOLD)
A MOST REMARKABLE
COINCIDENCE

AND WE THINK SO TOO.
BUT DON'T FORGET US
WHEN YOU NEED OIL.

GEOLOGICAL SCIENTIFIC
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FORT WORTH

BRADFORD Oil Refining Company

is pleased with its NEW BENZOL-KETONE Dewaxing Plant

the 10th of its kind... *designed and built by* LUMMUS

1

The plant was completed exactly on contract schedule despite delays by some suppliers of equipment.

2

In zero weather, initial operations were smooth and continuous.

3

Neutrals of zero pour test ready for shipment on second day of initial operation.

4

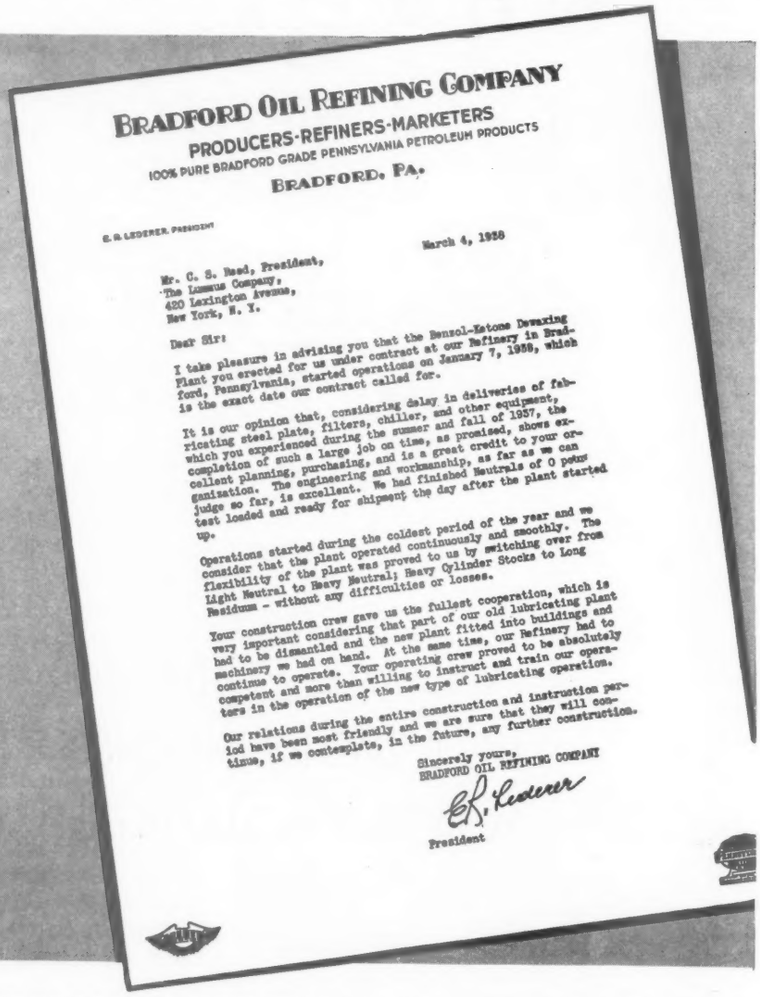
Stocks are changed frequently with facility, without slopovers.

5

Dewaxing plant installed, initial operations completed without interrupting operation of existing lube oil plant.

6

Engineering, workmanship, operating skill and instruction of staff by Lummus excellent.



BRADFORD OIL REFINING COMPANY
PRODUCERS-REFINERS-MARKETERS
100% PURE BRADFORD GRADE PENNSYLVANIA PETROLEUM PRODUCTS
BRADFORD, PA.

C. B. LEDERER, PRESIDENT

March 4, 1938

Mr. C. S. Reed, President,
The Lummus Company,
420 Lexington Avenue,
New York, N. Y.

Dear Sir:

I take pleasure in advising you that the Benzol-Ketone Dewaxing Plant you erected for us under contract at our Refinery in Bradford, Pennsylvania, started operations on January 7, 1938, which is the exact date our contract called for.

It is our opinion that, considering delay in deliveries of fabricating steel plate, filters, chiller, and other equipment, which you experienced during the summer and fall of 1937, the completion of such a large job on time, as promised, shows excellent planning, purchasing, and is a great credit to your organization. The engineering and workmanship, as far as we can judge so far, is excellent. We had finished Neutrals of 0 pour test loaded and ready for shipment the day after the plant started up.

Operations started during the coldest period of the year and we consider that the plant operated continuously and smoothly. The flexibility of the plant was proved to us by switching over from Light Neutral to Heavy Neutral; Heavy Cylinder Stocks to Long Residuum - without any difficulties or losses.

Your construction crew gave us the fullest cooperation, which is very important considering that part of our old lubricating plant had to be dismantled and the new plant fitted into buildings and machinery we had on hand. At the same time, our Refinery had to continue to operate. Your operating crew proved to be absolutely competent and more than willing to instruct and train our operaters in the operation of the new type of lubricating operation.

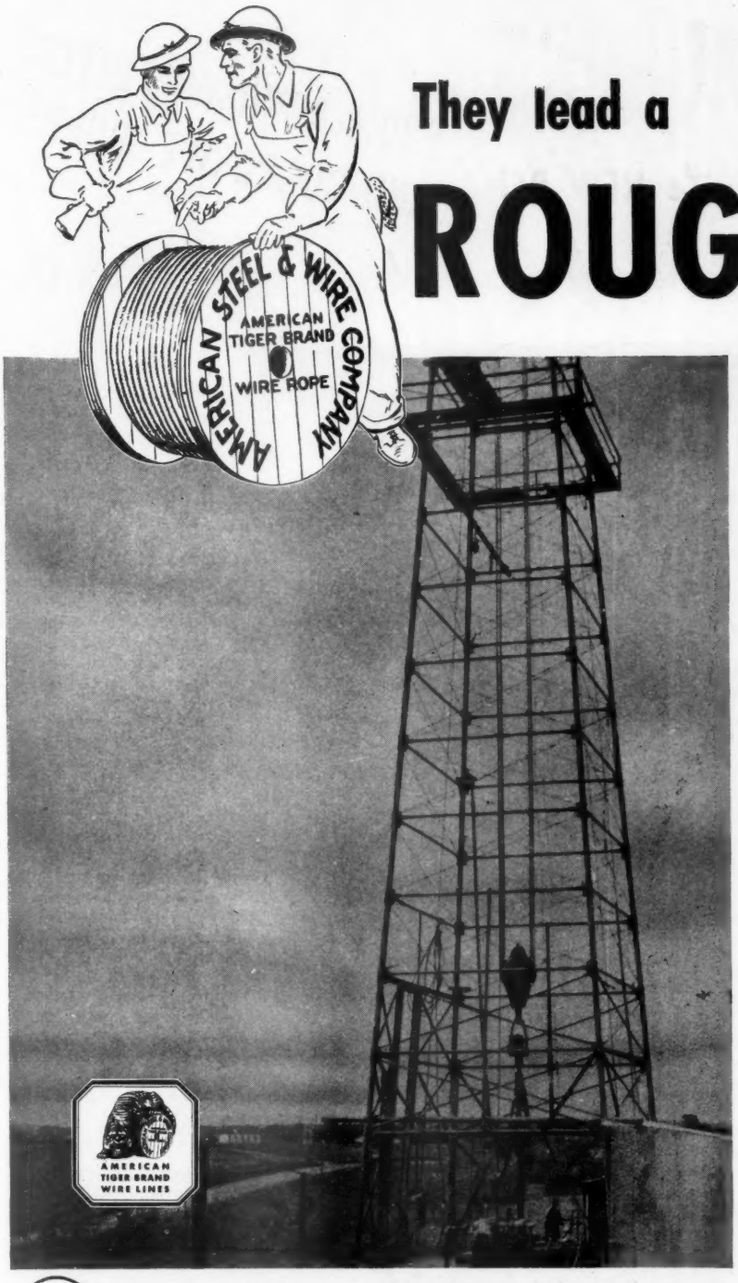
Our relations during the entire construction and instruction period have been most friendly and we are sure that they will continue, if we contemplate, in the future, any further construction.

Sincerely yours,
BRADFORD OIL REFINING COMPANY
C. B. Lederer
President

THE LUMMUS COMPANY, 420 LEXINGTON AVENUE, NEW YORK, N. Y. • 411 WEST FIFTH STREET, LOS ANGELES, CAL. • BUSH HOUSE, ALDWYCH, LONDON, W. C. 2

LUMMUS

PETROLEUM REFINING PLANTS



They lead a ROUGH LIFE and they're made to stand it

WIRE line economy is so dependent upon long life and trouble-free operation that it pays to use only lines made to stand rough wear. For trouble-free operation you need wire lines that stand up under terrific strains—that avoid whipping at high speeds.

Each of the many types of American Tiger Brand Wire Lines is made to definite specifications of strength, flexibility, and elasticity. Extreme care in production, backed by constant research and inspection, assures lasting service.

American Tiger Brand Wire Lines are available in Standard (non-preformed) or Excellay (preformed) constructions. Each type and size is made to serve its own particular purpose and will give you complete economy and dependability. Our engineers will gladly work with you to determine which type is best suited to your needs.

American TIGER BRAND Wire Lines

AMERICAN STEEL & WIRE COMPANY

Cleveland, Chicago and New York

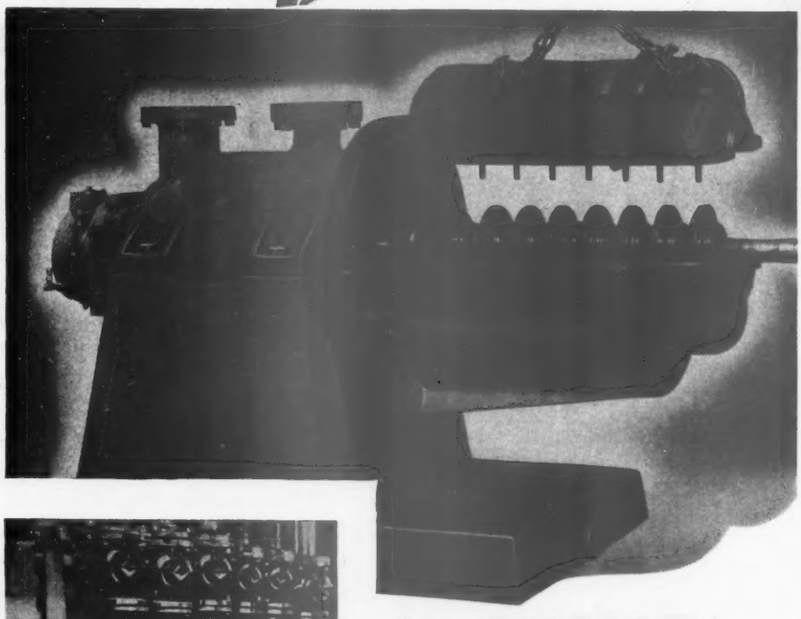
COLUMBIA STEEL COMPANY, Russ Building, San Francisco

United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL

Safety... FROM ABRASIVE "BITES" AND CORROSIVE "BURNS"

NICKEL



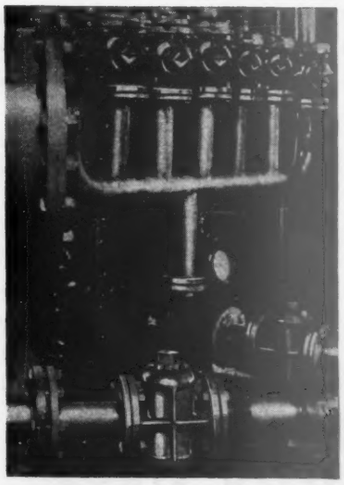
ABRASIVE CRUDE. Continuous service at pressures of 1100 p.s.i. moving 750° F. crude containing abrasive coke and sediment yet, says Byron Jackson Co., Los Angeles, maker of this turbine-driven pump at left, "First inspection of Nickel cast iron inner case, after nine months' use, shows no noticeable effects of either corrosion or erosion."

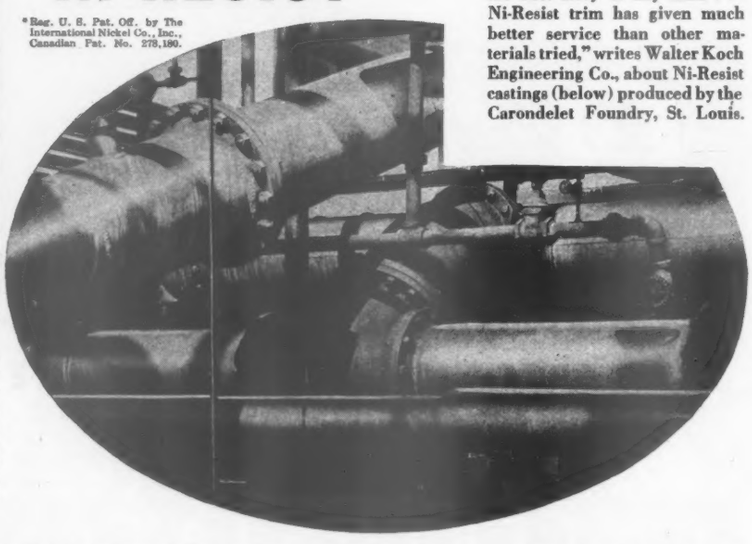
• • •

MIDCONTINENT. Oil condenser lines, raw, cracked gasoline, untreated light straight-run gasoline—you know how these uses destroy pipings and valves of plain iron. But not Ni-Resist, the patented Nickel cast iron. "For petroleum refineries . . . by far the best alloy of any kind . . . Ni-Resist trim has given much better service than other materials tried," writes Walter Koch Engineering Co., about Ni-Resist castings (below) produced by the Carondelet Foundry, St. Louis.

NI-RESIST*

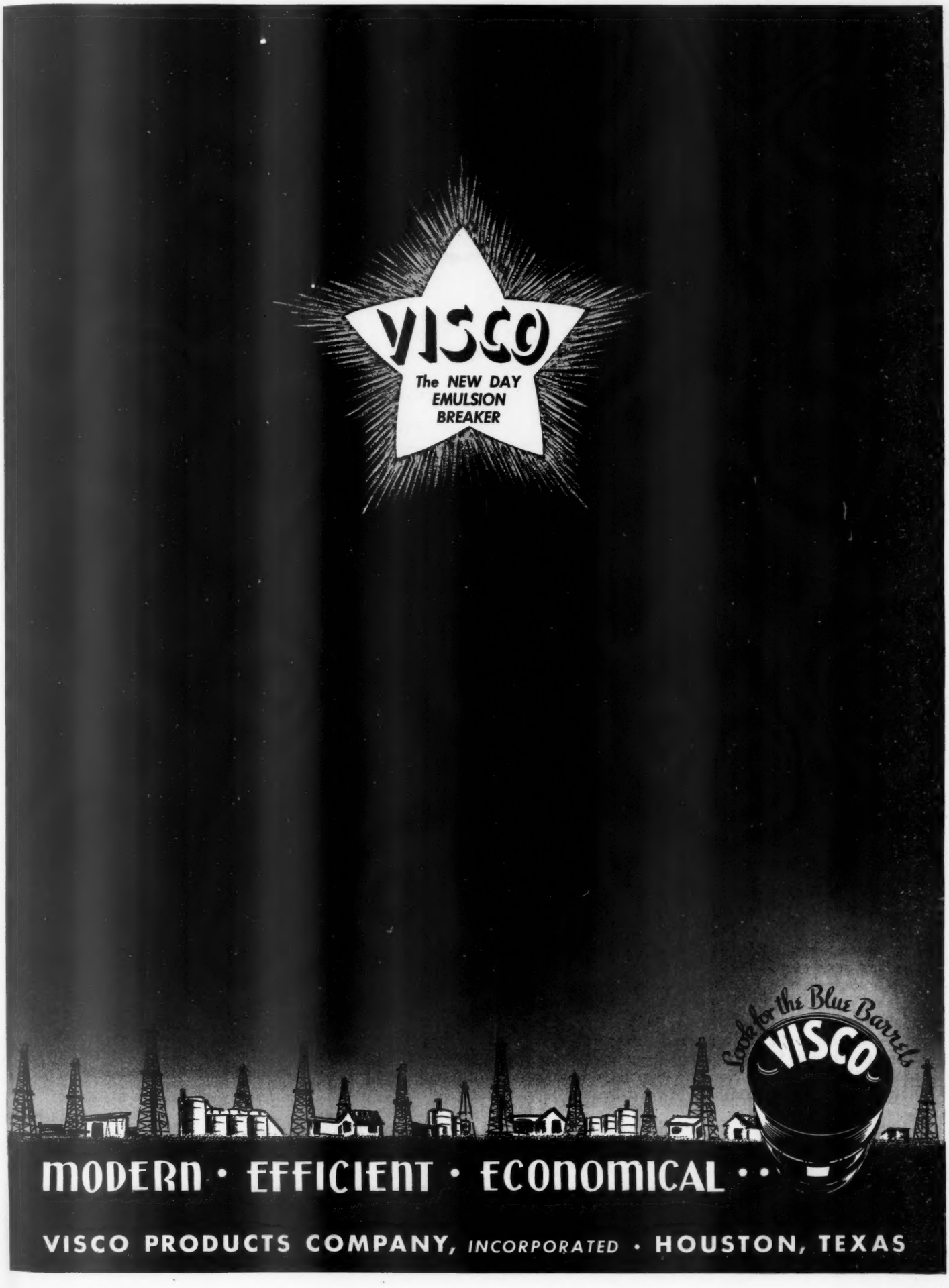
*Reg. U. S. Pat. Off. by The International Nickel Co., Inc., Canadian Pat. No. 278,180.





CHEMICALS. Handling corrosives for Carbide and Chemicals Co., South Charleston, W. Va., these A.C.F. valves of fine-grained Nickel-chromium alloy iron are easily machined to close limits to retain pressure tightness, despite temperature changes. Plug valves that stay tight, resist corrosion, and require no auxiliary packing, are produced by American Car & Foundry from a dense Nickel-chromium iron.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.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The NEW DAY
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BREAKER
Look for the Blue Barrels
VISCO
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VISCO PRODUCTS COMPANY, INCORPORATED · HOUSTON, TEXAS

The hard, heavy hauling jobs in the oil industry go to International Trucks. The Olson Drilling Company relies on these powerful trucks to get their equipment through to location as this picture in one of their camps indicates. International Six-Wheelers (see truck in foreground) are famous in the fields for their work.

The Tougher the Job the Greater the Need for INTERNATIONALS

International Trucks long ago proved they can take a lot of punishment. The *quality* International Harvester builds into them shows up to the user's advantage in oil-field and other tough hauling. The investment you make in Internationals *pays dividends* in economy of operation and maintenance, dependability, and long life. Time alone has not built the reputation and preference for these trucks—*performance per* dollar has been the answer. Today Harvester experience and high-grade workmanship are available in 30 models and 99 wheelbases—ranging in size from Half-Ton Pick-Up Trucks to powerful Six-Wheelers. Turn your hauling over to Internationals—select your trucks from this broad line and solve your hauling problems the most satisfactory way. See these trucks at the nearby International dealer or Company-owned branch showroom.

An International Six-Wheel Truck owned by C. L. Tyrrell, contractor at Chase, Kansas, moving a cracking tower a distance of 100 miles. This unit and two other International winch-equipped trucks also lowered and raised this 80-foot tower. Mr. Tyrrell operates 15 Internationals.

INTERNATIONAL HARVESTER COMPANY
(Incorporated)
180 North Michigan Avenue Chicago, Illinois

INTERNATIONAL TRUCKS

The Girbotol Process is a simple, cyclic, highly effective liquid purification process for the removal and recovery of Carbon Dioxide, Hydrogen Sulphide and other acidic gases from gaseous mixtures. The equipment required is relatively small, inexpensive and "standard".

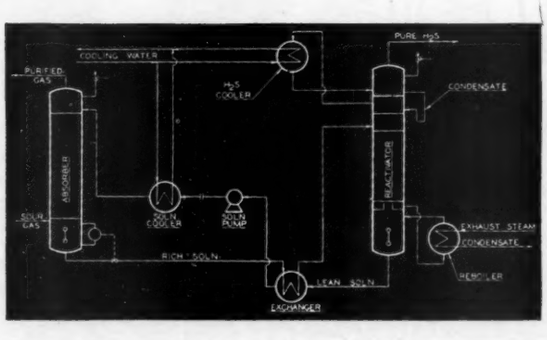
GIRBOTOL PROCESS SALVAGES A BIG INVESTMENT!

About two years ago, the natural gas from the well-known Otis Gas Field in Rush County, Kansas, began to turn "sour". And when an important gas field turns sour, it means that a big investment "turns sour", too, unless the gas can be sweetened—*economically.*

After a very thorough-going investigation, one of the large producers at Otis Field installed a Girbotol Process Plant, which was designed not only to sweeten, but also to dehydrate the sour gas.

Operation of this forty-million-foot plant began in November, 1937. Shortly after, another producer built a *second* Girbotol Plant, of ten-million-foot capacity. Now, after several months' experience with these *two* Girbotol Plants, still another Otis Field producer is building a thirty-million-foot plant! Like the others, this will be a combination plant for the removal of both H_2S and water vapor.

Thus it goes—everywhere! Almost without exception, wherever desulphurizing processes are being purchased, Girbotol is selected—to provide sweeter gas, at less cost, than is possible by any other process. We would like an opportunity to give you further facts.



The Girbotol Process is both broadly and specifically protected by U. S. Letters Patent Re. No. 18,958 and other United States and foreign patents and patent applications owned and licensed by

The Girdler Corporation
INCORPORATED
Gas Processes Division
Louisville · Kentucky

WHELAND-LUCEY SWIVELS

Can Take it!

ON THE DEEPEST, TOUGHEST WELLS

E-6500-BA

E-6000-BA

Wheland-Lucey Swivels are designed for the deepest drilling in any territory — they have established many enviable records. For instance; when Denver Producing and Refining Company ran down the last joint of drill pipe to set their record string of 7830' of 9⅝" casing in the famous Binger well, they also established a record for drilling with the heaviest string of drill pipe. At 7830' they suspended and rotated a dead weight of 240,000 lbs. on their E-6500-BA Wheland-Lucey Swivel.

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Lucey Products Corporation, Tulsa, Okla.
Houston Oil Field Material Co., Inc.
Houston, Texas
Murray-Brooks Hardware Co., Ltd.
Lake Charles, Louisiana
Frick-Reid Supply Corporation, Tulsa, Okla.

CONSTRUCTION

Wheland-Lucey Swivels are "Oil Bath" construction with Spring Loaded, Lubricated, Wash Pipe Packing.

	Model E-6500-BA	Model E-6000-BA
Upper Thrust	SKF	TIMKEN
Main Load	TIMKEN	TIMKEN
Alignment	AMERICAN	TIMKEN and AMERICAN
Load Rating of Swivel at 100 RPM	350,000 lbs.	250,000 lbs.
Net Weight	2,850 lbs.	1,325 lbs.

Write for Bulletin No. 158

EXPORT: Lucey Export Corporation, 3505 Woolworth Building, New York, N. Y.; Broad Street House, London, E. C. 2, England

THE WHELAND COMPANY

ROTARY DRILLING EQUIPMENT

Chattanooga, Tenn.

ALCO in IRAN

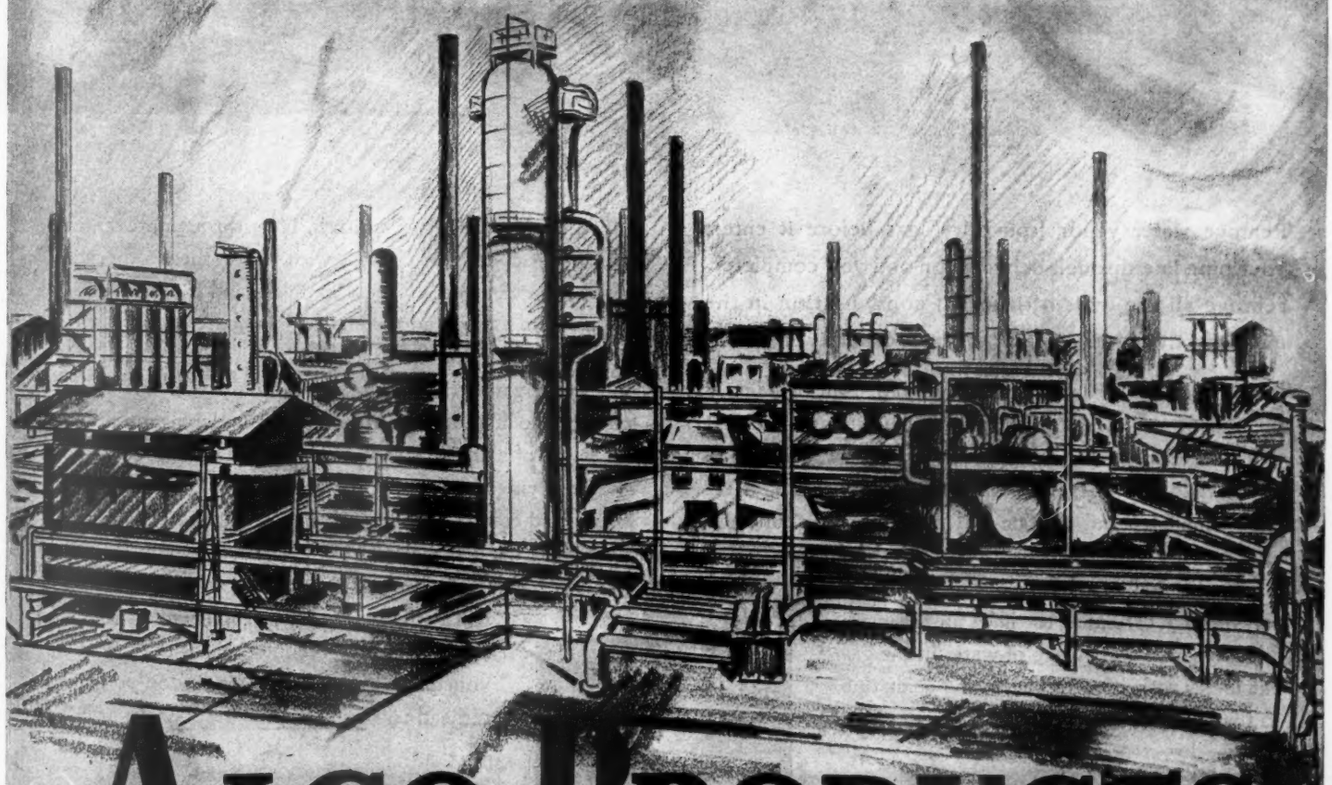
25,000 bbl/day—Single Debutanization Unit

One of the largest single unit pressure distillate fractionation plants in the world is the Alco-designed-and-fabricated unit in Iran.

Unstable pressure distillate is processed in a 9 ft. x 70 ft. debutanizing tower for close fractionation. Reboil heat of 25,500,000 BTU/hr. is supplied by circulation of tower bottoms thru a furnace operating at an efficiency of 74%.

95% of the butane and lighter fractions are removed, and 99.6% of the pentane and heavier fractions are retained.

Two years of successful operation demonstrates the soundness of ALCO engineering and design.



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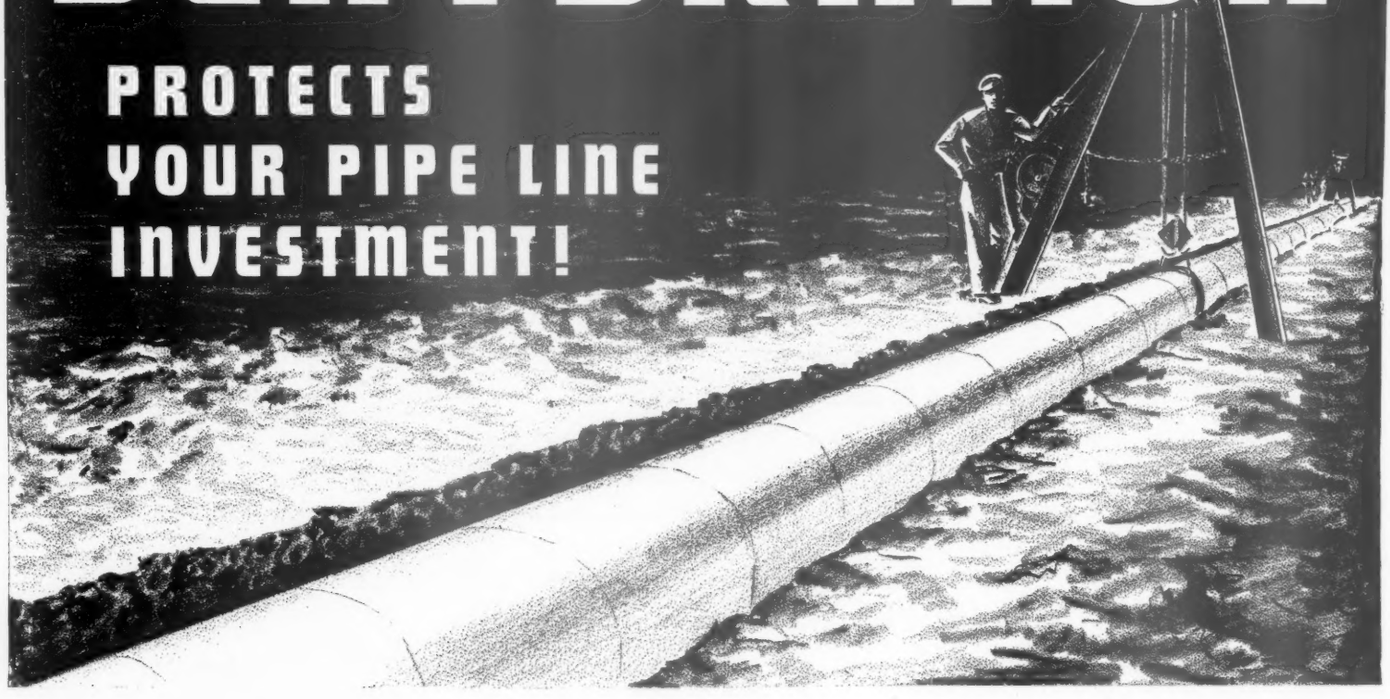
DIVISION OF

AMERICAN LOCOMOTIVE COMPANY
THIRTY CHURCH STREET NEW YORK, N. Y.

AMERICAN LOCOMOTIVE SALES CORP.
ARTILLERY HOUSE, ARTILLERY ROW, LONDON, S. W. 1, ENGLAND

Gas DEHYDRATION

PROTECTS YOUR PIPE LINE INVESTMENT!



Remove water vapor from "dry" gas before it enters your pipe line through dehydration and you completely remove all the evils of internal condensation in the most effective, most efficient and least expensive manner!

Dehydration permits constant operation of your pipe line **at the full of its rated capacity.** Through Summer and Fall, dehydration prevents collection of condensate in low line spots, while through Winter and Spring, internal icing is entirely eliminated and the line may be counted on for delivery of its full capacity when loads are at their peak!

Dehydration is, as well, pipe line life insurance! It pays its way through extending the line's life for many added years. The absence of water in the gas eliminates formation of line-eating acids due to the presence of oxygen, hydrogen sulphide or carbon dioxide in the gas itself. Thus, through preventing them from coming in contact with water, these otherwise destructive elements are held harmless and the damage resulting from internal corrosion is eliminated.

Protect your pipe line investment with dehydration—not only by increasing the span of its life—but by making it possible for the line to function at all times, under all conditions, at the full of its load capacity. Get the full facts about these double dividends from dehydration. As the engineers, designers and erectors not only of the world's first dehydration plant using the diethylene glycol cycle, but calcium chloride plants for many of the country's foremost companies, we will gladly survey your problem and submit a solution based on conditions as they exist in your particular instance. Inquiry on your letterhead will bring prompt response!

★ ★ ★

NATURAL GASOLINE PLANTS
GAS DEHYDRATION UNITS WITH CALCIUM CHLORIDE or DIETHYLENE GLYCOL CYCLES
STABILIZATION PLANTS

PARKHILL-WADE
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LOS ANGELES CALIFORNIA

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PRESSURE MAINTENANCE PLANTS
BUTANE PRODUCTION UNITS
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Greater Power for Greater Depths

GARDNER-DENVER

14x14 STEAM DRILLING ENGINE

The 14 x 14 Twin Cylinder Engine may be used with the highest pressure boilers in today's rotary drilling service.

CONSTANTLY increasing depths call for a drilling engine of unusual strength and stamina. The Gardner-Denver 14 x 14 Twin Cylinder Engine is now offered for the deepest drilling operations of the present, will also fulfill the needs of any future deeper program now contemplated.

Numerous field tests have proved the fundamental soundness of this engine. A large factor of safety is provided in each part to eliminate breakdowns and minimize wear. Satisfactory lubrication at the low engine speeds used when coring at great depths is furnished by a combination splash and force feed oiling system.

Gardner-Denver's long experience in manufacturing steam drilling engines has been the source of many mechanical refinements in this engine—all of which makes for added years of life. Ask your Continental representative to furnish complete information.

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QUALITY MANUFACTURING
By Muskogee Iron Works

Muskogee Iron Works have been steel designers, fabricators and erectors for thirty years — fifteen years experience in building oil field equipment. Their trained engineering staff, skilled workmen and complete manufacturing facilities, combine to make possible the engineering achievement which distinguishes the new Atlas-M.I.W. Pumping Equipment.

One of many different combinations of heavily constructed Pumping Units backed by the integrity of both the Atlas Supply Co. and Muskogee Iron Works.

COMPLETE DISTRIBUTION
By Atlas Supply Co.

* Combining the manufacturing facilities of M.I.W. with the distributing, sales and service organization of Atlas Supply to give better service to oil producers on this complete line of Pumping Units, which have proven their superiority in the field.

ATLAS SUPPLY CO.

GENERAL OFFICES
MUSKOGEE, OKLA.

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STORAGE TANKS — REFINERY EQUIPMENT

50—55,000 Bbl.—All steel, 5 Ring Storage Tanks.

128—80,000 Bbl.—All steel, Latest type Storage Tanks.

These tanks offered F.O.B. cars or reerected on grade furnished by customer.

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Robt. W. Duden
2100 S. Union,
Tulsa, Okla.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor, Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio

FOR SALE: 9½" rotary rig complete with derrick. Completely overhauled. A-1 condition. Cost $125,000 new. Located Miller Co., Ark. OWNER, Box 101, Longview, Texas.

SECTIONAL STEEL BUILDINGS FOR SALE: 1—30 x 10 x 60 standing; 1—20 x 8 x 128 K.D. Oklahoma City; 1—24 x 8 x 106 K.D. Seminole. Condition O.K. Inspection invited. I. T. I. O., Bartlesville.

FOR SALE

A COMPLETE REFINERY

Also Tanks from 500 to 10,000 bbls.

Also all miscellaneous refinery equipment, machinery and fittings.

REFINERIES SALVAGE COMPANY

DRAWER O, ARP, TEXAS.

Phone: 9102 Overton, Texas.

FOR SALE: At Oklahoma City warehouse several C-10 Sullivan pneumatic pumping heads complete and with preheater furnaces ready to go—or would rent, option to buy, with rental to apply on purchase. I. T. I. O., Bartlesville. Okla.

STANDARD Rig Front New—All Steel—Unitized—RS1X LeRoy Motor—OCS Revisible Jack Shaft and Clutch, Steel Base Chain Driven Reel and Hoist, only drilled 600 feet. Slightly over half price. Bennett Petroleum Corporation, Republic Bank Building, Dallas, Texas.

FOR SALE: At our Bartlesville garage 1—No. 40 Sullivan Core Drill Unit on steel wheels. I. T. I. O. Company, Bartlesville, Okla.

FOR SALE

OIL FIELD EQUIPMENT

Drilling rigs, standard rigs, new and second hand casing, line pipe and machinery. 25,000 ft. of 4" full hold and regular tool joints seamless drill pipe. Also have sixteen miles of 8" P.E. standard line pipe suitable for high pressure line. Located near Kansas City, Mo. Wire, Write or Phone.

LOUISIANA IRON & SUPPLY COMPANY
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FOR SALE: WILSON, MOGUL MODEL SPUDDER. Completely equipped with collapsible mast and tools. Practically new. Box 524, Oklahoma City. Phone 8-3623.

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IF YOU HAVE Oil or gas production financially distressed even in litigation including shutdown wildcats contact us for assistance, no stock or bonds. Address Box J-521, The Oil and Gas Journal, Tulsa, Oklahoma.

PIPE LINE EQUIPMENT

Whether you buy or sell pipe line equipment don't fail to be represented in our 12th Annual Pipe Line Number which is to be published September 22nd.

This edition will be one of the finest issues ever published and it will be an issue of immediate and lasting reference value to pipe line executives, engineers, superintendents and key operating men.

Copy for this publication must be in our hands by September 19th. Send Us Your Copy NOW!

Classified Department

THE OIL AND GAS JOURNAL, Tulsa, Okla.

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FOR SALE BY OWNER, small amount of royalty in Bemis and McBride-Giffin fields, Kansas. Highest class royalty, yielding 6% to 7% even under present severe proration. Fields contain 14 large wells and are but partially developed. For particulars and prices address:
R. M. MILLARD, EAU CLAIRE, WIS.

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Oil Man's Calendar

August

31-Sept. 3.—Spokane, Wash., Pacific Coast meeting American Institute of Electrical Engineers.

September

5-9—Milwaukee, Wis., American Chemical Society.
14-16—Atlantic City, N. J., National Petroleum Association, thirty-sixth annual meeting, Hotel Traymore.
14-16—Santa Barbara, Calif., annual meeting Pacific Coast Gas Association. Biltmore Hotel.
27-29—St. Louis, Mo., National Association of Petroleum Retailers, annual meeting.
27-Oct. 2—El Paso, Tex., midyear meeting American Association of Petroleum Geologists.

October

5-7—San Antonio, Tex., fall meeting petroleum division American Institute of Mining and Metallurgical Engineers.
6-7—Tulsa, Society of Automotive Engineers, National Regional Fuels and Lubricants meeting.
6-8—Knoxville, Tenn., fall meeting of industrial minerals division of American Institute of Mining and Metallurgical Engineers.
Week of 10—Atlantic City, N. J., American Gas Association Annual Convention.
10-14—Tulsa, North American Gasoline Tax Conference.
10-14—Chicago, National Safety Congress, Stevens Hotel.
12-13—Indianapolis, Ind., Indiana Independent Petroleum Association, fall convention, Hotel Severin.
13-15—Los Angeles, Calif., Society of Automotive Engineers, Aircraft Production meeting, Ambassador Hotel.
18—Tulsa, annual meeting of National Stripper Well Association.
18—Tulsa, annual meeting of Oklahoma Stripper Well Association.
19-21—Tulsa, Independent Petroleum Association of America.
20-21—Los Angeles, Calif., industrial minerals division and petroleum division of American Institute of Mining and Metallurgical Engineers.
27-29—San Antonio, annual meeting, Texas Mid-Continent Oil and Gas Association.

November

1-5—Tucson, Ariz., regional meeting American Institute of Mining and Metallurgical Engineers.
14-18—Chicago, A.P.I. annual meeting, Stevens hotel.

1939

April

24-29—Houston, Tex., Oil-World Exposition.

May

—— Tulsa, Natural Gasoline Association of America.

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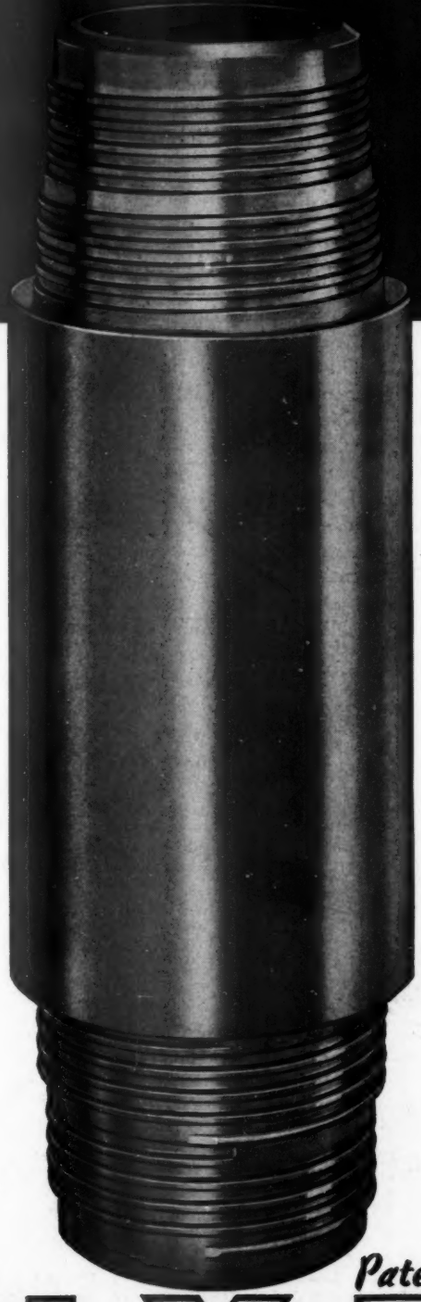

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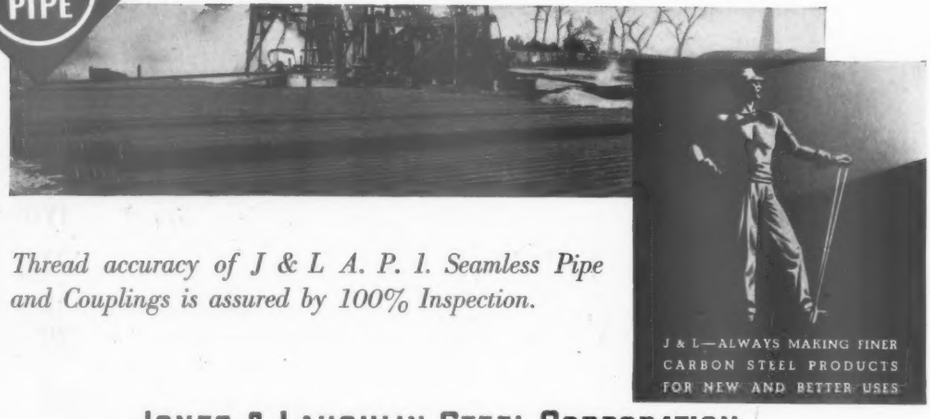

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